

wodtke Pellet Stove Technology

Operating Manual for S4 Electronic Controlled Stoves for Software S4 002 and Higher

Thank you for buying a wodtke pellet stove. Please read this manual before installing and putting your stove into operation! This will help you to avoid damage that can occur from improper installation or operation and your stove will be a source of comfort and enjoyment for you and a boon for the environment for a long time to come.

We hope your pellet stove gives you many hours of warm, snug comfort in your home.

Your wodtke GmbH

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1 Important General Information

Please read all attached instructions and information carefully before installing your stove and putting it into operation. In this way you will avoid operating errors and malfunction. The installer and the user must inform themselves sufficiently through the instruction manuals **before putting the stove into operation**. **Please observe the relevant local technical codes and regulations (for ex. state building regulations, fireplace regulations, heating and ventilation technical code, electrical/VDE guidelines etc).**



In Germany the appliance may only be put into operation when the district master chimneysweep has issued an operating licence. Inform him in good time if you are planning to install or change a fireplace.



The pellet stove's **intended use** is described below. Any other use will be deemed improper. wotke will assume no liability for any damage resulting from such improper use. Operating the pellet according to its intended use also means complying with the operating and assembly instructions. Any inadmissible manipulation or change to the appliance voids all warranty and guarantee claims.

All work on this stove, including **installation, assembly, initial operation, servicing and repairs**, should only be carried out by a **duly qualified company** (heating or air heating installers). Improper work performed on this stove voids all warranty and guarantee claims. Electrical devices may only be assembled and connected to the mains by a **duly qualified electrician**. Electronic components such as circuit boards, air flow sensors and the operating panel are sensitive to electrostatic charge.

As part of the **final acceptance** procedure the installing company must instruct the user in a detailed and competent manner on the stove's operation, cleaning and servicing. The company must in particular inform the user on the use of suitable fuel, the need for regular cleaning by the user, the need for servicing and the safety instructions. Any disregard of the attached instructions, in particular of the need for regular cleaning and servicing, voids all warranty and guarantee claims.

Before putting the stove into operation make absolutely sure that all **accessories have been taken out of the firebox and ashpit** and the fuel hopper is free of residues (for ex. rubbish, screws...).

The appliance must regularly be **cleaned** by the user.

For the **servicing** of the appliance we recommend that the user make a service contract with his dealer. If he is sufficiently skilled himself and has been instructed in due detail by the installing company the user may also undertake the regular servicing himself.

Pull the plug before performing any work on the stove! The mains plug and its socket must be easily accessible at all times. It is forbidden to operate the appliance if the power cable is damaged. A damaged power cable must immediately be replaced by a duly qualified craftsman to prevent hazards.



Do not pull the mains plug while the stove is in operation!
First switch off the stove and wait until the fan after-run time is over (G OFF).



By adhering to the proper use, operation, care and servicing of your wotke products you will enhance their value stability and service life, help to conserve valuable resources and go easy on the environment as well as your purse.

2 System Requirements

Appliances from wodtke are always connected in some way to other domestic installations or products and therefore, like all technical products, they have certain system requirements that must be met to ensure trouble-free operation. The following sections specify some of most important requirements, which is to say that they do not necessarily name all requirements. Please observe all instructions and information, as already stated in the introduction. It is always advisable to have the installation of a pellet stove planned thoroughly in advance by a qualified company to ensure that the system components work properly together and the intended overall solution is achieved. wodtke provides a wide range of compatible accessories for this purpose.

2.1 Application scope and limits

Airplus appliances:

- Single-room heater (warm air heater serving the room of installation or several rooms)
 - Capacity range 2-6 kW: maximum energy output = 9,000 kWh per year at 1500 full load operating hours at 6 kW.
 - Capacity range 2-8 kW: maximum energy output = 12,000 kWh per year at 1500 full load operating hours at 8 kW.

Waterplus appliances (capacity range 2- 10 kW):

- Auxiliary heater in addition to existing ones (auxiliary room heating and domestic water heating)
- Single-storey heater without domestic water heating (domestic water heated separately)
- Whole-house heater in combination with other heat generators

Waterplus appliances should always be planned with particular care, since they not only produce heating water but through heat irradiation and convection also heat up the room of installation itself. Please observe the following in this regard.

A Waterplus pellet stove alone is **not sufficient as a hot drinking water supply** because it would also heat up the room of installation when used for heating drinking water in the summer. For this purpose a combination with solar thermal energy or other heat generators (for ex. electric, oil, gas) is required and, in fact, the ideal solution.

Before opting for a specific model it is always necessary to determine on the basis of the standard calculation rules the **heat demand** and from this the **heating capacity** required for the room / flat / house in question. Confer DIN EN 12831 (design heat load of buildings) on this point.

When a pellet stove is to be used for whole-house heating the **energy demand for heating drinking and domestic water** must be considered in addition to the pure room heating demand. Another point to bear in mind is that heating a new building can require more than 20% additional energy during the **drying phase** (approx. 0.5 to 1year) in some cases.

If the temperature is to be set low at night and there is a high demand for hot domestic water (shower water) in the morning, it must be ensured that the stove has sufficient **heating capacity to meet peak demand**. This can be achieved, for ex., by means of a sufficiently dimensioned buffer storage in combination with other heat generators (electric immersion heater, oil or gas boiler for reserve capacity).

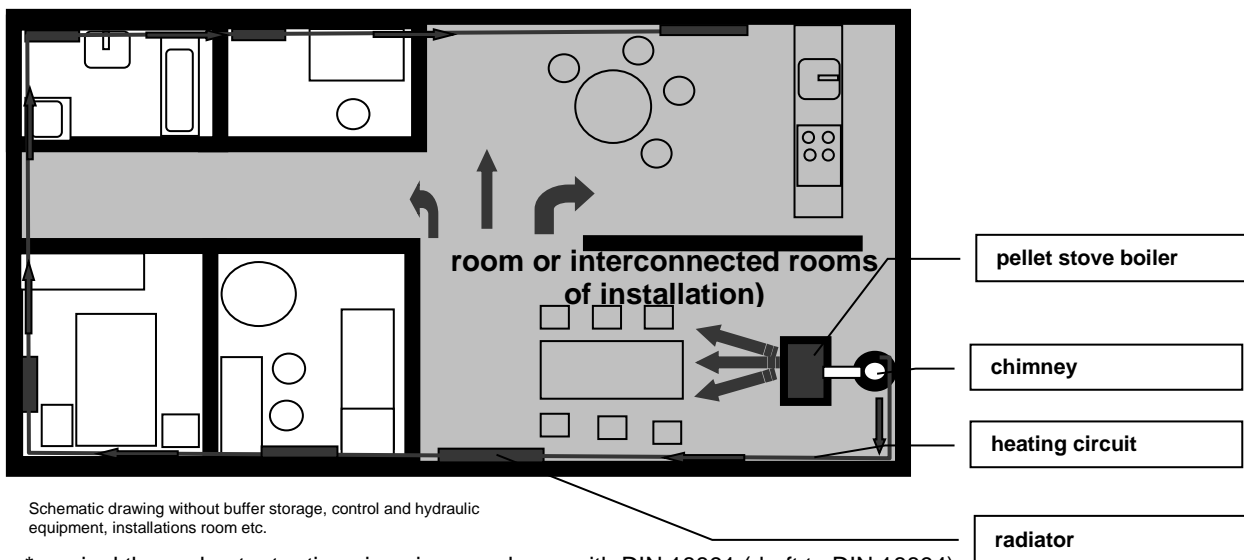
Please also note that the heating demand of a house is influenced to a large degree by its occupants' heating habits and can thus turn out higher than calculated (for ex. due to high room temperatures, frequent airing, tilted windows etc.).

As a **practical guide value**, the largest of our Waterplus appliances (10 kW nominal heating capacity) is capable of generating a maximum **15,000 kWh per year**. This is equivalent to 1500 full load operating hours without interruption at a thermal output of 10 kW. Note that when delivered by an appliance of our “Topline” series, 40% (= 6,000 kWh) of this thermal output would go towards heating the room of installation, while with an appliance of our series “Smart” “PE” or “CW 21” the share of heat delivered to the room of installation would be around 20%, i.e. 3,000 kWh. **This must be taken into account in the planning phase by ensuring that the room of installation is sufficiently large.** The following section contains recommendations for minimum room sizes and suggestions for alternative solutions for smaller rooms of installation.

2.2 Minimum room sizes

For all wodtke pellet stoves, the room of installation should at minimum have a floor area of 10 m² and a room volume of 15 m³. With **Waterplus appliances** one must also take into account that the room of installation is additionally heated through heat radiation and convection. The following guide values apply in this case:

- Topline Waterplus appliances (60% of thermal output delivered to water*):
room of installation should account for at least 50% of total heated floor area
- Smart / PE / CW 21 Waterplus appliances (80% of thermal output delivered to water*):
room of installation should account for at least 30% of total heated floor area



If the room of installation is too small or the hot water demand too high, the room of installation will become overheated.

Heating surfaces in the room of installation of a Waterplus appliance: If solar energy plants or buffer storages are used for auxiliary heating, then the room of installation of the Waterplus appliance must have additional heating surfaces (radiator, floor heating) so that it can be heated even when operation of the boiler is not required. This can be the case in interseasonal periods, for example: In autumn the solar plant delivers sufficient energy to charge up buffer storage completely. The pellet stove boiler can then remain switched off because the room of installation can be heated via a radiator using energy from the buffer storage. This would not be possible without a radiator in the room of installation.

Proposed solution when installing Waterplus appliances in small rooms: If you have opted for a Waterplus device and the designated room of installation does not meet the above requirements, you can use a clock or room thermostat that

switches the Waterplus appliance off as soon as the set maximum room temperature has been reached. This will reliably prevent the room of installation from overheating. In this case the energy needed for the other rooms or for heating drinking water must be generated from additional heat sources. This is usually achieved by means of a **cascade connection** with an electric immersion heater or a oil or gas boiler. Then the auxiliary heat generator only starts up automatically when the boiler of the Waterplus appliance is switched off. This means that the base load is still borne by the boiler of the Waterplus appliance, while the other heat generators only serve to meet demand peaks.

2.3 Minimum operating time / External controller settings

Pellets are a solid fuel which inherently require **more time to ignite than do liquid or gaseous fuels**. After the start of ignition it can take a few minutes for the first flame to appear, and a **total of 15 minutes** before the preheating programme is completed and the appliance has **reached its full thermal output**. In contrast to oil or gas fuelled stoves it can also **take a few minutes after switching off the appliance until all the pellets in the burner pot have burnt down and the flame goes out**. This is why the fan of the appliance has been programmed to continue running for several minutes after switching off the stove (display shows "G OFF"). You should therefore wait until this **fan after-run time** is over before restarting the appliance.

When used with an external controller the appliance should therefore be allowed to run for a **minimum operating time of 30 or better still 60 minutes**. This means that the controller must be set in such a way that the **stove's operating (on-off) cycle does not become too short, and its hysteresis should be sufficiently large** to allow at least 15 minutes to pass from the "off" to the "restart" signal to accommodate the fan after-run time.

2.4 Heat delivery to water with Waterplus appliances

The heat delivery to water during the operation of Waterplus appliances must be >1.6 kW at minimum, since otherwise the installed safety devices will make the appliance go into modulation mode or switch off. Typical signs of insufficient heat delivery to the water heating system are modulation mode (indicated by "H.M" on the display), frequent switching between on and off (accompanied by the message "TW OFF" on the display) or an error shutdown triggered by the temperature cutoff (STB), (indicated by the message "ST"). This shows the importance of thorough planning to ensure that the appliance is properly connected to the domestic water system and its control system is properly configured. **The appliance must have a continuous water throughflow of > 600 l/h**, and the circulation pump and the length and flow resistance of the connecting lines must be dimensioned accordingly. At a flow rate of 600 l/h the appliance itself has a flow resistance of 130-140 mbar. **Insufficient heat delivery to water points to a problem with the hydraulic system, not with the appliance!**

2.5 Room and ambient temperature and humidity during operation

All wotdke appliances are designed only for **operation in rooms** at normal humidity and at **room temperatures between +5 °C and +25 °C** (ambient temperature during operation). At higher temperatures it can happen that safety devices intervene in the stove's operation, while for operation at lower temperatures its settings will need to be adjusted. Please observe the notes on stove operation concerning this point.

Note: Waterplus appliances require a suitable anti-freeze agent (compatible with solar energy plants) if they are to be operated at room temperatures <+5°C. wotdke appliances are generally not splash-proof and must not be installed in wet rooms.

2.6 Connection to chimney

Legal regulations require that pellet stoves be connected to a chimney suitable for solid fuel fireplaces. **The flue gas connector must be made of metal and meet the requirements of DIN 1298**. Your district master chimneysweep will be pleased to advise on this matter. Joint operation of several appliances via one chimney is admissible, since wotdke stoves fall into

design category 1 according to DIN 18891. The flue draught (chimney draught = negative pressure) must range between 0 Pa minimum and 20 Pa maximum. A chimney calculation prior to installation is mandatory (DIN 4705 or EN 13384). The chimney has an important safety function in the event of a power failure and must be correctly dimensioned so as to ensure that flue gas is carried off safely from the appliance. In the case of excessive chimney draught we recommend installing a draught limiter.

2.7 Combustion air supply

wodtke stoves **use room air for combustion**, and a sufficient supply of combustion air is therefore essential. The air pressure in the room of installation must not be negative. Please observe the relevant technical rules / regulations and any additional information provided by wodtke when operating your appliance in combination with air conditioning systems (for ex. ventilation systems, exhauster hoods, pneumatic conveyor systems etc.). **The use of a type DS 01 wodtke differential pressure switch with accessories (see price list) is mandatory to ensure safety in the case of combined operation with a ventilation system.**

2.8 Pellet quality

All statements on DIN-certified pellet quality in this documentation refer to an ash content of 0.25%, 650 kg/m³ bulk density and a minimum calorific value H_u of 4.9 kWh/kg. 1000 kg of pellets of this specification have an energy content equivalent to 500 litres of heating oil and require approx. 1.54 m³ of storage space. Please observe the notes on in this in Chapter 11 (Approved fuels). Deviations from these specifications are unavoidable due to the DIN tolerance ranges allowed for pellets in terms of, for. ex., ash content, bulk density, composition and pellet size / geometry, and this in turn leads to deviations in other parameters. In the event of high bulk density, special geometries or high calorific value of pellets it can happen that internal safety devices temporarily lower the thermal output of the appliance until the desired values (= nominal thermal output) are complied with again. This is in no way a shortcoming. The appliance then goes into modulation mode (see Chapters 0 and 0).

2.9 How to increase return flow temperature in Waterplus appliances

Return flow temperature at the water inlet must be at least 50 °C (**ideally 55 °C**), since otherwise soot and tar can accumulate. wodtke provides special hydraulic connection pieces for this purpose.

2.10 Cleaning, care and servicing

Unlike liquid and gaseous fuels solid fuels always leave ash and soot behind as combustion residues. Although the combustion quality and operating comfort of wodtke appliances are vastly superior to that of conventional wood fired stoves, this advantage does entail the effort of regular cleaning and maintenance to keep the appliance clear of soot and ash. Neglect of cleaning and servicing can result in operating trouble for which the manufacturer cannot be held liable. Please observe the relevant instructions in Chapters 0 and 9. Regular cleaning, care and servicing will also help to maintain the efficiency of your stove, since soot is an excellent heat insulator and can therefore reduce heat dissipation and thermal efficiency considerably.

2.11 Mains voltage / Power supply

230 VAC / 50 Hz. Voltage fluctuations between 195 and 255 V are admissible. Automatic identification / switchover to 200 VAC / 60 Hz.

3 Hardware and Functional Description

3.1 Type plate and serial number

Below is an example of a type plate (Smart Waterplus):



6-digit serial number of the appliance

The location of the type plate differs between models, as follows:

Appliance type	Position of type plate
Smart Airplus / Waterplus	Inside of fuel hopper
Frank Airplus	Inside of fuel hopper
CW 21 Airplus / Waterplus	Inside of fuel hopper
Airplus insert stove "PE" / Waterplus insert stove "PE"	Inside of firedoor + front right foot (behind inlet grille)
	Inside of firedoor + front right foot (behind inlet grille)
Topline Airplus / Waterplus	Underside of fuel hopper lid

Important Note:

Please make a note of the serial number stated on the type plate of your stove immediately after its initial operation and keep the invoice in a safe place. **To provide spare parts or respond to guarantee claims we always need the serial number of the appliance** so that we can be sure of getting the correct spare parts for you. Without a serial number and without the date of purchase we are also unable to accept guarantee claims or exclude wrong delivery. Please keep all the documents delivered together with your appliance in a safe place for as long as you own it. This facilitates customer service and will also be appreciated by a subsequent owner should you ever pass the appliance on to someone.

Please enter the serial number of your appliance here: _____

3.2 Scope of delivery

The following accessories are contained in the delivery:

- Ash scraper, glass cleaner, cleaning brush, instructions
- Door opener or key (only with Smart/CW 21/Frank/insert stove PE)
- Felt pads for appliance feet (only with models of the Smart series)
- Air bleed key (only with Waterplus appliances)

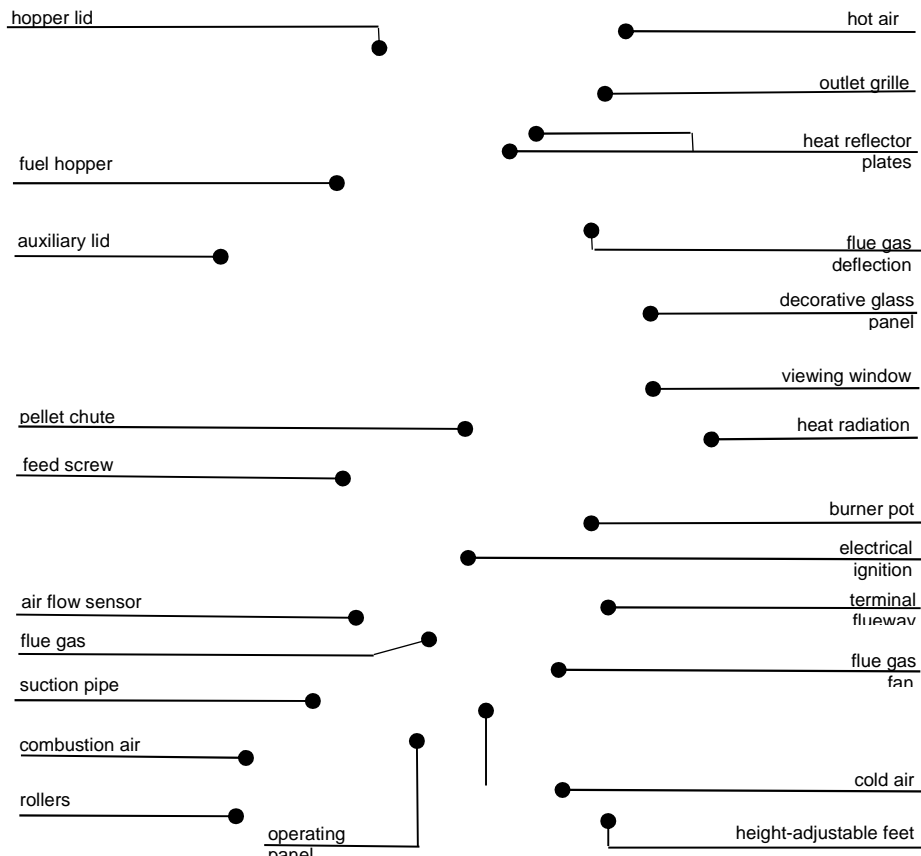
4 Functional Description

A wodtke pellet stove is a special heating device designed exclusively for wood pellet combustion. During operation the appliance generates warm air which is released into the room. Appliances additionally equipped with an integrated water heat exchanger (Waterplus appliances) additionally produce hot water that is fed into a buffer storage or the domestic heating system. In addition an agreeable warmth is irradiated from the side panels, the cast metal door and the ceramic glass viewing window. To put the pellet stove into operation just switch it on and select the desired output level. If connected to an external controller the pellet stove can also be switched on and off automatically and its thermal output can likewise be modulated automatically. The pellets are fed into the burner by an all-automatic process and ignited by an electrical ignition system.

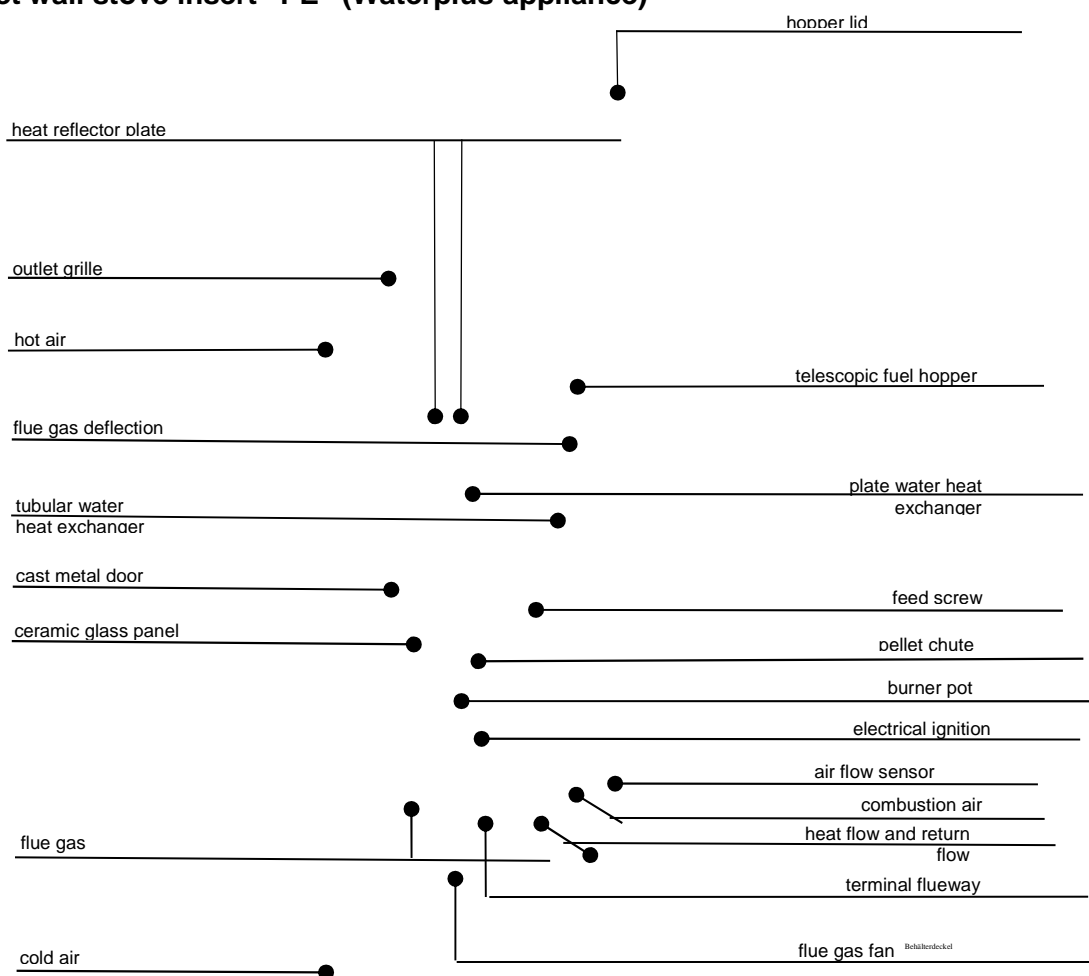
The feed screw automatically delivers fuel at a rate corresponding to the selected thermal output level. The air required for combustion is fed to the burner pot at a controlled rate. The gas combustion process is completed in the firebox and the downstream flueways, and the thermal energy thus released dissipates into the ambient space. Waterplus appliances additionally deliver heat to the water in the boiler.

Located at the end of the flueways is a flue gas fan which safely carries the flue gas off to the chimney at a rate adjusted to the rates of fuel combustion and combustion air supply. The flow of incoming combustion air is measured by an air flow sensor located in the suction pipe and compared with the desired flow. Deviations are corrected by automatic upward or downward adjustment of the speed of the flue gas fan. The accompanying sounds from the flames and drive motors remain well within generally accepted levels.

Sectional drawing Pellet stove "CW 21" (Airplus appliance)



Sectional drawing Pellet wall stove insert "PE" (Waterplus appliance)



The user must regularly clean the burner pot of ash and slag. The viewing window must also be cleaned to remove the ash deposit that develops as an inevitable side-effect of any solid fuel combustion. (see Chapter 0). The flueways require regular servicing; this should be done by a duly qualified company (see Chapter 9).

wodtke appliances are designed, tested and approved for installation in private homes. A sufficient flow of oxygen must be ensured to keep up the combustion process. The combined operation of a wodtke appliance with air conditioning devices such as an exhauster hood, ventilation system or a pneumatic system for wood pellets is therefore only permissible if certain requirements are met. In this regard please observe any additional information provided by us or ask your district master chimneysweep or the installing company.

Waterplus appliances not only deliver heat to the domestic water system but inevitably also to the room of installation. It is the responsibility of the planner or architect of the house or of the installing company to ensure during the planning phase that the thermal output of the appliance is compatible with the features of the house, in terms of both the domestic water system and the control equipment. As a rule of thumb, the room of installation should account for at least 30% (50% for Topline boilers) of the total heated floor area to prevent overheating.

All wotke appliances are tested as design category 1 devices (DIN 18891 / DIN 18894), and it is therefore permissible to connect several of them to a single chimney.

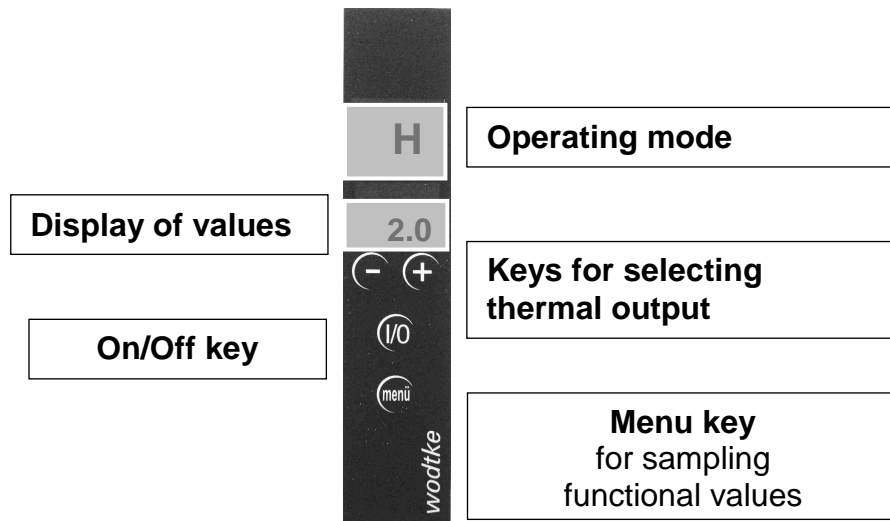
5 Operation

The appliance is equipped with various operating keys as well as a display to guide the user. **As a rule you will only need to use the I/O key and the “+” and “-” keys to operate the stove .** The “Menu” key is for information purposes only.

- The I/O key is for switching the appliance “On” and “Off”.
- The +/- keys are for selecting the desired thermal output level.

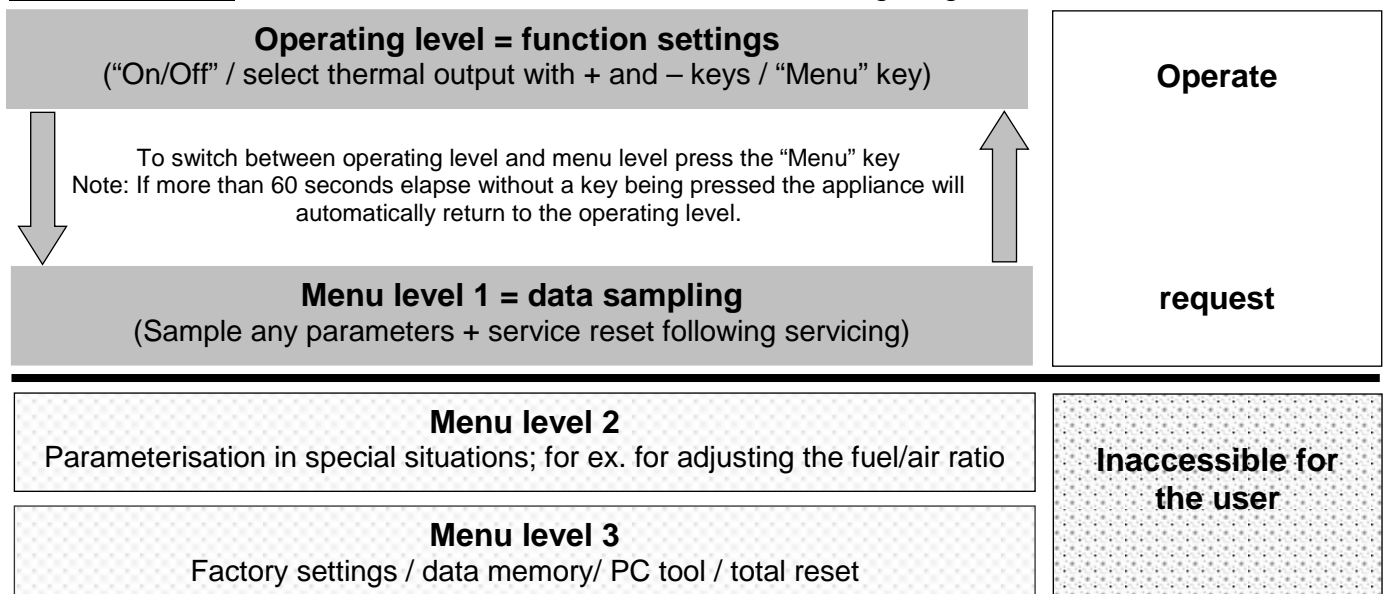
A number of control elements (accessories) are available for operating the appliance in automatic mode. This is described in detail in the following sections.

Note: Pressing the “Menu” key causes the appliance to jump to the menu level. To quit this level press the “Menu” key again. It is not possible to operate the appliance from the menu level in any way except for switching it on or off with the I/O key! If 60 seconds elapse without a key being pressed the system will automatically return to the operating level.



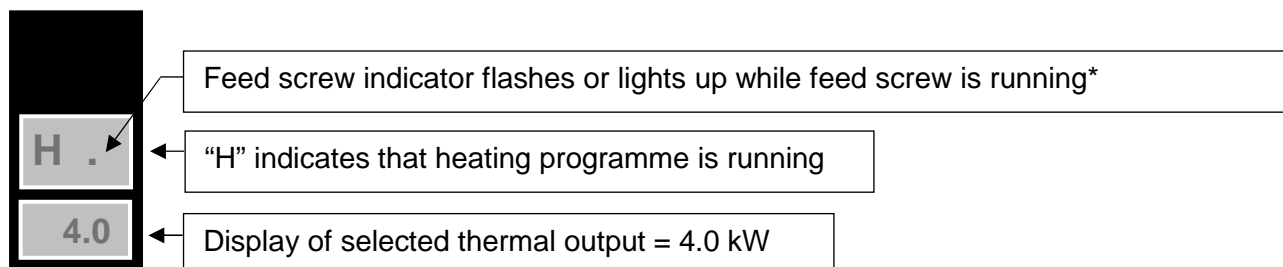
5.1 User levels

The appliance has several user levels. **The only level from which it can be operated is the operating level.** The user levels are illustrated in the following diagram.



5.2 Manual selection of thermal output

The desired thermal output of the appliance can be adjusted at any time using the **+/- keys**. The selected value stays valid even after switching off the appliance and remains so until a new value is entered manually. After completing the preheating programme the appliance enters the **heating programme**, where it automatically delivers the **selected thermal output** so long as this setting is not overridden by an internal or external controller (see **modulation**). The selected thermal output is displayed in kW and can be adjusted in steps of 0.5 kW.



* This dot also lights up to indicate stand-by mode

Tip: In buildings with rooms temperatures below +10 °C (for ex. holiday flats, new buildings) we recommend setting thermal output to at least 4.0 kW.

5.3 Initial operation

Important information:

- In Germany the appliance must be inspected by the district master chimneysweep before its initial operation. The master chimneysweep is responsible for issuing an operating licence.
- Always keep the firedoor closed, even when the appliance is cold.
- Never light the appliance with flammable or readily ignitable liquids.
- The door with the ceramic glass window becomes very hot during operation. Make sure that nobody touches the window.
- The panels may also become hot after prolonged operation. Use the heat protection gloves delivered with the appliance.
- Do not let children or adolescents come near the appliance unsupervised!
- All steel and cast metal parts of the stove have been coated and baked with a highly heat-resistant enamel at the factory. During the stove's initial operation the enamel will undergo an afterdrying process. This can give rise to odour and fumes! In this case please observe the following:
 - Keep everyone including pets out of the room during this process, since the emitted fumes may be harmful to health!
 - Air the room thoroughly to allow the fumes to escape.
 - During the afterdrying process the enamel will still be a little soft. Avoid touching enamelled surfaces to make sure they don't get spoilt.
 - Let the appliance run for some time at a high level to allow the enamel to harden completely.

Complete the installation procedure as described in the assembly instructions before filling pellets into the fuel hopper. Fill the hopper with at least 5 kg of wood pellets.

Make sure that no objects have been left in the firebox or burner pot.

5.3.1 Special notes on the initial operation of Waterplus appliances

Waterplus appliances must never be put into operation without water or without being connected to the heating system! Even a short test run without water can cause considerable damage to the appliance, and in any case voids all warranty claims. Never bridge or remove any of the safety devices.

Prior to initial operation the boiler of the Water appliance must be connected to the heating system (storage heater, radiator, wall heating or the like) via a wotdke stove connecting station*. The entire system must be properly deaerated. The heating system must be capable of delivering heat (radiators turned on, storage cold).

*If you are not using a wotdke stove connecting station, the return temperature must instead be raised to >50 °C (ideally 55 °C) and a pump control facility must be installed.

5.3.2 Filling the fuel hopper

Open the hopper lid wearing heat protection gloves. Open the pellet bag at the seam and **place it in the fuel hopper with the opening face down touching the protective grating and slowly draw the bag out.** This prevents the pellets from falling into the hopper from a height and unnecessarily throwing up dust. With appliances of the Smart series (protective grating located higher up) refill pellets slowly from a low height. After refilling, **close the hopper lid** and keep it closed during operation.

Tip: Pour the pellets slowly from a low height to cause as little dust as possible (see above). You can also use a bucket or the like for filling pellets into the fuel hopper.

When starting up for the first time the feed screw will still be empty. The first pellets will fall into the burner pot when the appliance has been running for about 10 minutes and the ignition system has switched off again. The same applies when the fuel hopper has been refilled too late and the last pellets have passed the feed screw.

In either case, do the following to ensure reliable ignition:

- Switch appliance on using the I/O key and wait until the preheating programme has finished or pellets start dropping into the burner pot.
- At this moment switch the appliance off and then immediately on again using the I/O key. The preheating programme will then start anew and the appliance will light as soon as pellets start dropping into the burner pot. Repeat this procedure as necessary.

Tip:

If the fuel hopper and the feed screw have run completely empty you can shorten the time needed until pellets start dropping into the burner pot and the appliance lights again by dropping a handful of pellets into the burner pot or filling it up to the first row of holes. **Note:** Do not fill the burner pot completely; this would cause malfunctioning.

5.3.3 External feed systems

wotdke has special accessories available for connecting the appliance to pellet feed systems or storage spaces provided as part of the domestic equipment. Our appliances are approved for external feeding. For this purpose we recommend automatic gravity feed systems with a pellet storage space located directly above the place where the fuel hopper is normally mounted on our appliances. Then the pellets can simply slide down from the storage space into the hopper through gravity, with no need for maintenance or auxiliary energy. Alternatively one can also use electrical or pneumatic feed systems. In this regard please observe our additional technical instructions and in particular your local building regulations.

5.4 Preparations / Lighting the stove

Note: The ignition procedure starts anew every time the appliance is switched on as well as after a power failure, and it can take up to 10 minutes before the first flame becomes visible (depending on how clean the burner pot is).

- Open the firedoor. Check whether the burner pot and firebox are free of soiling and pellets and clean burner pot of pellets/ash/slag as necessary.
- Close the door.
- Open the combustion air pipe (if present).
- Switch the stove on by pressing the I/O key (after delivery the display will generally show “G OFF” or the “stand-by dot”). Now pellets are fed into the burner pot. **The stove lights automatically via the ignition cartridge installed in the device.** The pellets will start burning after 5-10 minutes at the latest.
- **If ignition fails** (unburnt pellets in the burner pot), please first check whether the burner pot is free of soiling (all air holes must be free; see also Chapter 0) and whether the fuel hopper has been filled. If you are using the stove for the first time or the fuel hopper has run completely empty it can take about 10 minutes before the pellets have passed the feed screw. **Clean the burner pot thoroughly before you try another start. Do not light the pellets by hand . After a false start empty the burner pot completely and dispose of the pellets and ash. Never return unburnt pellets from the burner pot to the fuel hopper and never try to light them by hand.**

➔ Danger of fire through glowing embers and/or overheating! ←

Important information:

- **Do not restart the appliance immediately after a successful start. Instead let it cool down for at least 5 minutes at “G OFF” before restarting. In this way you will avoid overheating the appliance.**
- **Be sure to keep the firedoor closed during the ignition phase and do not switch the appliance on and off repeatedly.**

5.5 Emergency operation with igniters

If the ignition cartridge of the appliance should fail you can still operate it when necessary by using woldtke igniters. Light the pellets with the igniters as follows.

- Open the firedoor. Check whether the burner pot and firebox are free of soiling and pellets and clean burner pot of pellets/ash/slag as necessary.
- Put woldtke igniters and a few pellets (**never more than a handful**) in the burner pot and light them. **Tip: Open the woldtke igniter a little before lighting it.**
- Close the firedoor and open the combustion air pipe (if present).
- Switch the stove on by pressing the I/O key (after delivery the display will generally show “G OFF” or the “stand-by dot”). Now pellets are automatically fed into the burner pot and the flue gas fan starts running.

Caution:

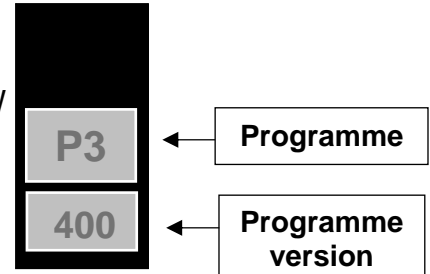
**Never use wood, paper, cardboard etc. or inflammable liquids for lighting the stove!
Never fill unburnt pellets or ash back into the fuel hopper.**

Danger of fire through glowing embers!

5.6 Appliance types and programmes

wodtke stoves have **different software programmes** installed **depending on the model**. The programme number appears for a few seconds on the display after switching on the appliance via the I/O key. The present operating manual only applies with the initially installed software (you can check this from menu level 1 – see Chapter 0).

- P1 (Programme 1):** Airplus appliance; thermal output 2 - 6 kW
P2 (Programme 2): Airplus appliance; thermal output 2 - 8 kW
P3 (Programme 3): Waterplus appliance; thermal output 2 - 10 kW



Each programme exists in different **versions (updates)**. The **programme version** is indicated by the number in the second line.

5.7 Operating states & functional messages

A distinction must be made between different operating states and functional messages. The display tells you at any time under which programme your appliance is operating.

- **Manual operation / Appliance switched off via I/O key:** message “stand-by dot”
- **Automatic operation / Appliance switched off via external controller:** (message “HE OFF”)
- A

5.7.1 Overview of functional messages (normal operation)

Function	Operating state
.	“Stand-by dot”, manual operation appliance switched off via I/O key
H E OFF	Automatic operation Appliance switched off via external controller
T W OFF	Automatic operation (only with Waterplus appliances) appliance switched off via internal controller
A -15	Ignition programme countdown in minutes
AI 15	Ignition start in x minutes (swaps with G off) countdown in minutes
H 4.5	Heating programme with manual output selection display of thermal output in kW
H M 2.0	Modulation heating programme via external controller (2-stage) display of thermal output in kW
H.M 2.0	Heating modulated by internal controller (safety function = 1 dot lights up between H and M) display of thermal output in kW
H E 4.5	Modulation heating programme via external controller (continuous controller) display of thermal output in kW
R 120	Cleaning programme countdown in seconds
G OFF	Fan after-run (15 minutes duration)

5.8 Manual operation / appliance switched off via I/O key

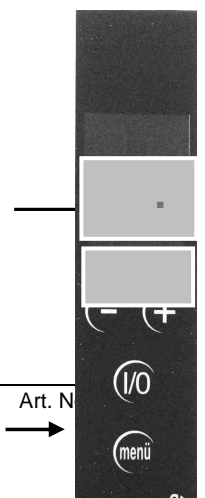
= display shows “stand-by dot” in top right field

= ready to be switched on manually

= not ready for external controller / automatic operation!

= thermal output adjustable, functional values available via “Menu”

After proper installation and connection to the mains the display should show “G Off” for fan after-run or (if fan after-run has already ended) the “stand-by dot”. When it appears alone the “stand-by dot” at the top right indicates that



the **appliance is switched off**. Automatic operation is not possible from this state. **To switch the appliance on press the I/O key.**

Important Note:

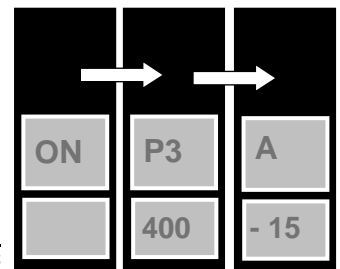
The I/O key overrides all other functions and is available in any operating state (an “emergency ON” switch so to speak).

The I/O key interrupts any preceding operating state by switching the appliance “OFF” or “ON”. If the appliance has been switched off with this key you can only switch it on again by pressing the I/O key again. **Note: In this state, i.e. when the “stand-by dot” is displayed the appliance will not react to signals from an external or internal controller!** External or internal controllers will identify the appliance as “not ready” in this state, even if it readily starts up when you press the I/O key. The desired thermal output can be adjusted at any time via +/-, even when the appliance is off. The “Menu” remains accessible when the appliance is switched off.

5.8.1 Switching the appliance on via the I/O key

Pressing the I/O key switches on the device.

After this the display briefly shows “ON” and then, for a few seconds, the programme version installed, for ex. “P3 400”. During these seconds the system checks whether all functions are o.k. In the event of an error the appliance does not start and instead display the relevant error message (see Chapter 0 ff.). If everything is in order the appliance then enters **preheating programme “A”** and eventually **heating programme “H”**.

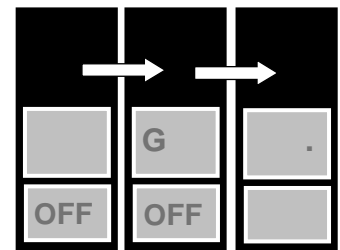


This appears for a few seconds (functional check).

5.8.2 Switching the appliance off via the I/O key

Pressing the I/O key switches on the device. and the message “OFF” will briefly appear in the display.

After “OFF” has been displayed the appliance enters the fan after-run phase (“G OFF”) and finally goes into stand-by “stand-by dot”.



5.8.3 Reset via the I/O key

The I/O key also allows you to restart the appliance after a class 1 error has occurred. The only way to restart the appliance after a class 1 error has occurred during operation is to press the I/O key. See Chapter 0 on this.

5.9 Automatic operation "HE OFF"

Functional message: "HE OFF"

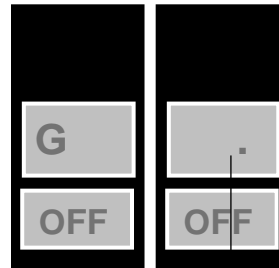
= appliance switched off via external controller

= appliance must be switched on again manually via I/O key

= functional values can be called u via the "Menu" key

When it displays this message the appliance is responding to an external controller. The appliance has been switched off via an external controller and will automatically be switched on again later by the same controller.

Note: If the appliance is now switched off via the I/O key or through a class 1 error, it can no longer respond to the external controller and will not start up automatically again. Instead the display shows "G OFF" and eventually the "stand-by dot" or, in the event of an error, the "stand-by dot" flashing alternately with the error code.



Appliance has been switched to "stand-by" and can no longer respond to an external controller

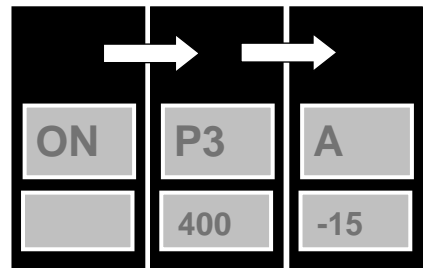
Tip: Do not switch the appliance off via the I/O key when using an external controller. The I/O key is only intended for manual operation or as an emergency switch in the event of errors.

Note:

When the pellet stove is being controlled externally, for ex. via a heating controller, it is advisable to clean the burner pot and its holes (combustion air holes) at least once a day and at the same time check that the burner pot is securely seated (see Chapter 0).

5.9.1 Switching the appliance on via an external controller

The appliance starts up as soon as its "ON/OFF" input receives an "ON" signal from an external controller. After this the display briefly shows "ON" and then, for a few seconds, the programme version installed, for ex. "P3 400". During these seconds the system checks whether all functions are o.k. In the event of an error the appliance does not start and instead display the relevant error message (see Chapter 0 ff.). If everything is in order the appliance then enters **preheating programme "A"** and eventually **heating programme "H"**.



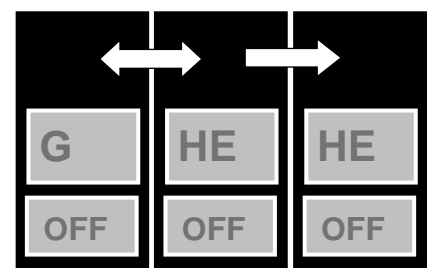
This appears for a few seconds (functional check).

Thermal output can also be adjusted in automatic operating mode by simply pressing the "+" and "-" keys.

With a suitable controller you can also modulate thermal output automatically rather than adjusting it manually (see ### Modulation via external controller).

5.9.2 Switching the appliance off via an external controller

When the appliance is switched off by an external controller after being in operation this is indicated by the messages "G OFF" and "HE OFF" flashing alternately until the end of fan after-run time. After this the display shows "HE OFF" alone.



5.10 Automatic operation "TW OFF" (only for Waterplus appliances)

Functional message: "TW OFF"

= appliance has been switched off via internal boiler sensor

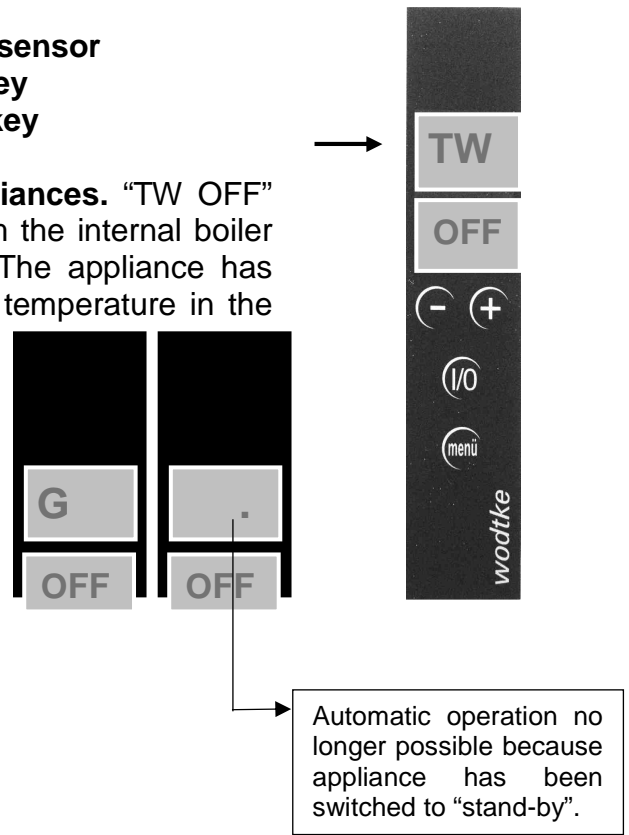
= appliance has to be switched on manually via I/O key

= functional values can be called up via the "Menu" key

This function is only available with Waterplus appliances. "TW OFF" means that the appliance is responding to a signal from the internal boiler sensor inside the heat exchanger (temperature TW). The appliance has been switched off via this sensor because the desired temperature in the water heat exchanger has been exceeded. It will be automatically switched on again later.

Note: If the appliance is now switched off via the I/O key or through a class 1 error, it can no longer respond to the external controller and will not start up automatically again. Instead the display shows "G OFF" and eventually the "stand-by dot" or, in the event of an error, the "stand-by dot" flashing alternately with the error code.

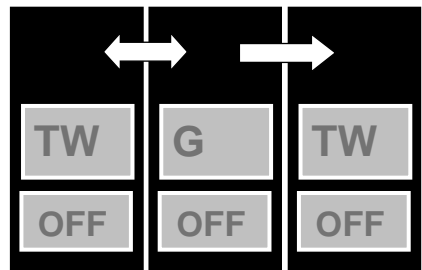
Tip: Do not switch the appliance off via the I/O key when in the "TW OFF" state. The I/O key is only intended for manual operation or as an emergency switch in the event of errors.



5.10.1 Switching on and off via "TW OFF"

When the Waterplus appliance is switched off by an internal controller after being in operation this is indicated by the messages "G OFF" and "HE OFF" flashing alternately until the end of fan after-run time. After this the display shows "TW OFF" alone.

When the appliance is restarted via an internal controller the display shows "ON" and then for a few seconds the installed programme version. If all is in order the appliance then enters preheating programme "A" and eventually heating programme "H".



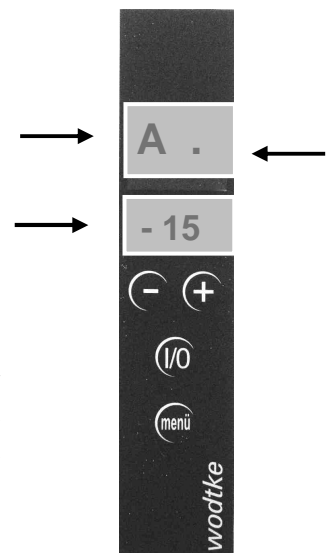
5.11 Preheating programme "A"

= display shows "A" for preheating programme

= display shows flashing dot for feed screw operation

= display shows remaining minutes of preheating programme

In the preheating programme the ignition element is active for the first 10 minutes after starting up, the pellets light after a few minutes and the appliance runs to operating temperature. The air flow sensors only become active after one minute, when the fan has reached constant speed and an air flow has developed. You can adjust thermal output in steps of 0.5 kW using the +/- keys. Thermal output setting only becomes active on completion of the preheating programme when the display changes to "H". The appliance can also be switched off with the I/O key during the preheating programme. It then enters the "G OFF" state and eventually goes into stand-by.



Important information:

- Do not restart the appliance immediately or within too short a time, but leave it to cool off in “G OFF” for at least 5 minutes before starting again. In this way you will avoid overheating the appliance.
- Be sure to keep the firedoor closed during the ignition phase and do not switch the appliance on and off repeatedly.
- If the appliance is switched off during preheating programme “A”, the ignition element remains active for the remainder of its set operating time of 10 minutes, i.e. even when the display already shows “G OFF” for fan after-run. When the preheating programme is aborted pellets that are already in the burner pot are lit all the same! The purpose of this is to burn away all the pellets left in the burner pot, so that it will be empty at the next start and the preheating programme can start again without difficulty.
- It can take up to 10 minutes from ignition until the first flame becomes visible (depending on how clean the burner pot is as well as on pellet quality).
- The preheating programme starts anew after every restart or power failure.
- If the preheating programme doesn't work properly (burner pot still full of unburnt pellets), be sure to observe the instructions in Chapters 0. and □. Clean the burner pot thoroughly of pellets and ash/slag before every restart. Do not restart the appliance right away: **Danger of overheating and fire!**

5.12 Heating programme “H” (normal operation)

= display shows “H” for heating programme

= display shows flashing dot for feed screw operation

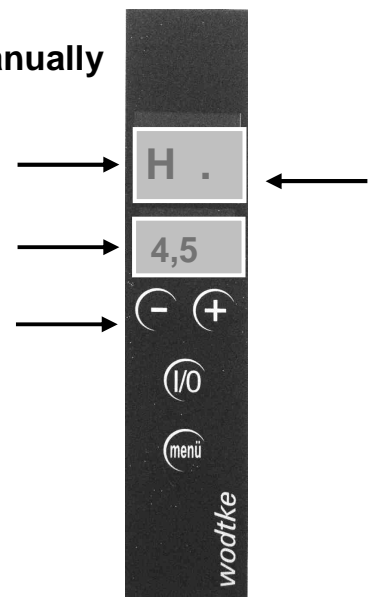
= display shows thermal output in kW

5.12.1 Heating programme when thermal output is set manually

In the heating programme the appliance delivers the manually preset output unless an external controller or an internal safety function requires otherwise. This provides an easy and convenient way of operating the appliance at the desired output level via the +/- keys.

With the +/- keys you can change the previously set output level in 0.5 kW steps at any time. However, manual changes in thermal output only become effective when there are no contradicting requirements from an external controller or an internal safety function.

When thermal output has been changed manually while an external controller or internal safety function is active, the value shown in the display will change back to the value required by that controller or function.



5.12.2 Modulation heating programme via external controller (2-stage)

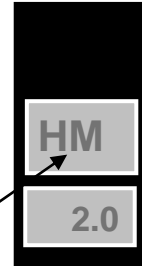
- = display shows “HM” for modulation for minimal thermal output
- = display shows flashing dot for feed screw operation
- = display shows thermal output in kW

Via the “MIN/MAX” input thermal output can be modulated so that it takes on either of two values. For this purpose an **external controller** (such as a room thermostat or a radiator controller) with a potential-free output signal must be used.

If “**MIN**” is signalled to the “MIN/MAX” input the appliance will reduce thermal output to the minimum level (“**HM**”).

If “**MAX**” is then signalled again to the “MIN/MAX” input the appliance will return to the **selected thermal output level “H”**.

Display indicates external modulation (MIN/MAX)



Note: Only use potential-free controllers for external modulation.

With the **+/- keys** you can change the previously set output level in 0.5 kW steps at any time. However, manual changes in thermal output only become effective when the external controller calls for “MAX” again.

5.12.3 Modulation heating programme via internal controller (safety function)

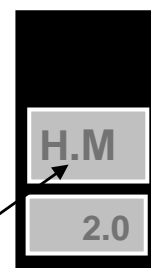
- = display shows “HM” for modulation for minimal thermal output
- = display shows dot between “H” and “M” for internal modulation
- = display shows flashing dot for feed screw operation
- = display shows thermal output in kW

The appliance automatically monitors **flue gas temperature “TR”** at the fan. In Waterplus appliances the water temperature “**TW**” is monitored as well. If the desired values entered into the software are exceeded, the appliance automatically reduces thermal output to the minimum level. When current values drop below the desired values entered into the software the appliance returns to the selected output level. Internal controllers have priority over external controllers because they serve safety functions.

With the **+/- keys** you can change the previously set output level in 0.5 kW steps at any time. However, manual changes in thermal output only become effective when the internal controller allows the device to return to the selected setting.

If an **internal controller** signals “**MIN**”, the appliance reduces thermal output to the minimum level (“**H.M**”).

Display of dot indicates internal modulation (MIN/MAX)



5.12.4 Modulation heating programme via external controller (continuous controller)

= display shows HE for continuous output modulation via external controller

= display shows flashing dot for feed screw operation

= display shows thermal output in kW

The Modulation input permits infinite adjustment of thermal output. For this purpose an **external controller** (such as a heating controller) with a signal output of **0-10 V** or **4-20 mA** must be used.

The signal voltage or current corresponds to the thermal output shown on the display. The appliance will deliver thermal output as required by the external controller.

Display indicates external modulation (continuous)



In the case of external modulation the external controller will usually have two outputs, of which one switches the device “ON” and “OFF” via the “ON/OFF” input, while the other controls the stove’s thermal output via the “MODULATION” input.

Note:

Only use potential-free controllers for the “ON/OFF” input.

The “MODULATION” input requires a controller with a signal output of 0-10 V or 4-20 mA. It first has to be activated and adapted to the controller’s signalling mode (0-10V voltage or 4-20 mA current) (see assembly instructions). A 0V or 4 mA signal at the “MODULATION” input means minimum thermal output, while a 10V or 20 mA signal means maximum thermal output.

With the **+/- keys** you can change the previously set output level in 0.5 kW steps at any time. However, manual changes in thermal output only become effective when the “MODULATION” input has been deactivated again.

5.13 Cleaning Programme “R”

- = display shows R for cleaning programme
- = display shows flashing dot for feed screw operation
- = display shows remaining cleaning time in seconds

The **cleaning programme** is carried out once an hour while the appliance is switched on. Fan speed is increased to maximum and pellet feed rate is reduced. This blows the lighter flue ash fraction out of the burner pot, thus improving the combustion of the less volatile constituents in the bed of embers. The cleaning programme reduces the required frequency of manual cleaning.

Note:

The **cleaning programme does not relieve the user from inspecting the burner pot every day or having the appliance serviced regularly as required.**

Important Note: Fuels with a high ash content can make it necessary for the user to clean the burner pot frequently in spite of the cleaning programme.

5.14 Fan after-run “G OFF”

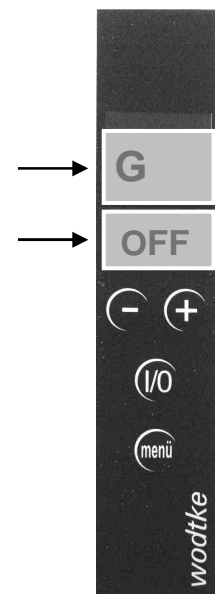
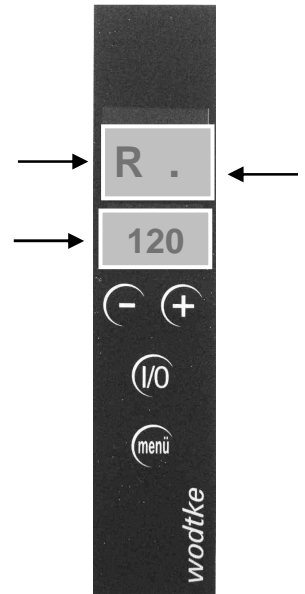
- = display shows “G OFF” for fan after-run (15 minutes)

Whenever the appliance is switched off it first enters the “**G OFF**” mode for 15 minutes. This can also occur as a result of an internal error or safety shutdown. The purpose of having a fan after-run phase after switching off the appliance is to ensure that flue gases are safely carried away and the entire fuel in the burner pot burns away completely. The feed screw is always off during fan after-run. This is normally the operating state in which wodtke appliances leave the factory. If the appliance is left plugged in for more than 15 minutes after switching off, the display will change to “stand-by”, indicating that fan after-run is over. The fan after-run phase “G OFF” counts as operating time.

When **fan after-run** is over the display either shows the “**stand-by dot**” or “**HE OFF**”, depending on whether the stove has been switched off manually or by an external controller (“HE OFF”).

Important information:

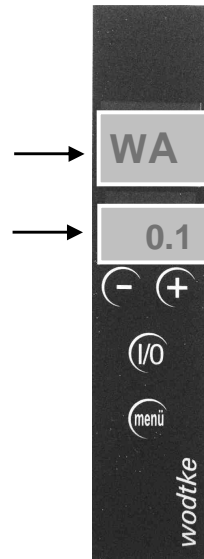
If the appliance is switched off during the preheating programme, the ignition element remains active for the remaining time of the preheating programme, even if the display shows “G OFF”. This means that the pellets in the burner pot are lit even if the preheating programme has been aborted. The purpose of this is to burn away all the pellets left in the burner pot, so that it will be empty at the next start and the preheating programme can start again without difficulty. This is one reason why one should never switch off the appliance by pulling the plug or disconnecting it from the power supply!



5.15 Service prompt “WA”

- = When servicing is due the display shows “WA” on starting up
- = using the I/O key and every 10 minutes thereafter
- = display shows excess pellet throughput in tons (line 2)
- = Have the appliance serviced (see Chapter 9)
- = Confirm that appliance has been serviced (see Chapter 9)

Have the appliance serviced by a duly trained technician at the latest when “WA” appears in the display. “WA” appears after a throughput of 1.5 tons of pellets following the last reset. The number below “WA” states for how long servicing has been overdue. Thus 0.1 means that 0.1 tons of pellets have been burnt since servicing became due. “WA” can be reset from menu level 1 after servicing (see Chapter 9), and the counter then starts counting again from 1500 kg. At menu level 1 you can also inquire how many kg of “standard pellets” (explanation see below) can still be burnt before servicing is due again (see Chapter 0).



Note:

Servicing may become necessary before “WA” appears, especially if the pellets have an ash content greater than 0.5% or the burner pot has not been cleaned regularly (see Chapter 0)!

Some tips of advice:

- Ask your supplier to confirm the ash content of your pellets in writing. This is a significant determinant of servicing frequency. High-quality pellets usually have an ash content of no more than about 0.2 to 0.3%!
- Clean the burner pot regularly (see Chapter 0)
- Make a service contract with your dealer.

Example of the influence of pellet quality on servicing frequency:

Our recommended service interval of 1500 kg of pellet throughput refers to high-quality pellets with an ash content of 0.25%. An ash content of 0.5% (i.e. twice as high) shortens the service interval to 750 kg because twice the amount of ash and soot will arise per unit of pellet weight. An ash content of 1% (i.e. 4 times higher than normal) accordingly reduces the permissible throughput between servicings by a factor of 4, i.e. to 375 kg. This is not reflected in the display, since this only refers to standard pellets.

Definition of standard pellets:

Wodtke appliances perform electronic calculations of pellet consumption etc. using formulas based on the following definition of standard pellets: **Standard pellets** have a **diameter of 6 mm**, a uniform **length of 1 cm**, a **bulk density of 650 kg/m³** and an **ash content < 0,25%**. In practice these values vary between pellet brands as well as between delivery batches, and the actual amount of pellets consumed can therefore deviate from the value shown in the display.

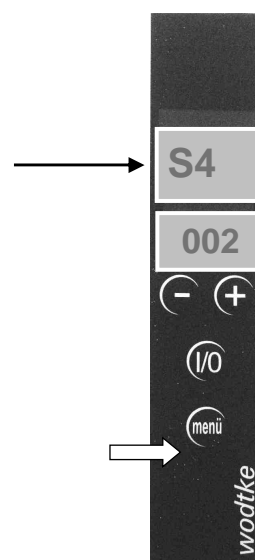
Note: Internal data processing (rounding of operating cycles) by the appliance can result in numerical deviations in counter readings by up to 6%.

6 Menu Level / Sampling of Functional Values

To sample functional values press the “Menu” key. Whenever you jump to the menu level the screen shown on the right appears **indicating the installed software** (for ex. S4 002). Use the +/- keys to display the other menu screens.

To **quit the menu level** and enter the operating level press the “Menu” key again. If 60 seconds elapse without a key being pressed the system will automatically return to the operating level.

It is not possible to make changes to the appliance from the menu level. Exception: The only **exception** to this is the I/O key, with which you can switch the appliance on and off even when working at the menu level. The I/O key is also active at the menu level.



Important Note:

Whenever any of the codes shown in the following table appear on the display this means you are at the menu level. It is not possible to operate the appliance from this level (except switch it “ON/OFF” via the I/O key).

Menu screen	Explanation	Desired value	Remarks
S4 001 or S4 002 or S4 003 etc.	Currently installed software version	---	Indicates which software is on the circuit board. It does not refer to the programme version , which is what determines power capacity etc.
Z on or Z OFF	Ignition	On = first 10 minutes after Start, otherwise Off	
S 0.0 to S 4.5	Working time of feed screw in seconds at maximum clock frequency 4.5 s.	0.7 – 2.6 (6 kW stoves) 0.7 – 3.5 (8 kW stoves) 0.7 – 4.5 (10 kW stoves)	
U	Performance (expressed as voltage) of flue gas fan in % (= control value as a function of standard value L)	Min. value for preheating programme U ≥42; min. value for heating programme U ≥24	Control value depends on set performance, chimney draught and soiling of appliance.
L	Air throughput at air flow sensor (= standard value)		Standard value may fluctuate due to chimney draught and especially soiling of appliance.
TP	Temperature at pellet chute	TP < 200 °C (only 6 kW Airplus appliances) TP < 170 °C (all other appliances)	Temperatures greater than the desired value TP trigger an error shutdown.
TL	Temperature at air flow sensor	TL < 85 °C	Measured at suction pipe; temperatures greater than the desired value TL trigger an error shutdown.
TR	Temperature at flue gas fan	TR min ≥ 49 °C TR max < 200 °C (6 K hysteresis)	Sampling 21 minutes after Start; temperatures lower than desired value TR trigger an error shutdown, while overtemperature triggers internal modulation (“H.M” appears).

Menu screen	Explanation	Desired value	Remarks
TW (only valid for Waterplus appliances)	Temperature at water heat exchanger	TW < 85 °C (11 K hysteresis)	Temperatures greater than the desired value TW trigger a regular shutdown, followed by restart as soon as TW ≤ 74 °C.
P (only valid for Waterplus appliances)	Circulation pump	On when TW ≥ 50°C Off when TW ≤ 46°C (4 K hysteresis)	Pump continues running for 15 minutes after stove shutdown, independent of TW.
R1	Relay output 1	See relay table	Functional message Shows whether the appliance is in operation or entirely switched off. Note: Fan after-run "G OFF" counts as operating time.
R2	Relay output 2	See relay table	Collective error message Shows that an error has occurred.
R4	Relay output 4	See relay table	Functional message (monitored safety relay) Shows whether the appliance is in operation or entirely switched off. Note: Fan after-run "G OFF" counts as operating time.
BW	Operating hours since last service reset		x 10 = hours ; this reading is set to zero with every service reset.
BG	Total operating hours		x 100 = hours ; this reading cannot be reset.
PW (this is the only screen for doing a service reset!) → See Chapter 0 on how to do a service reset.	Pellet throughput until next service is due. Given assuming 0.25% ash content		Given in tons, service is due at the latest when values ≥ 0. At service reset the value is reset to -1.5. Example: A PW = -0,7 means that the next service is due after another 0.7t or 700 kg of pellets.
PG	Total pellet throughput		Shown in tons ; this parameter cannot be reset.

6.1 Output of On/Off signals or collective error messages (relay table)

As can be seen from the above table, relay outputs R1, R2 and R4 are switched depending on the operating state or error status of the appliance. This feature can be used to forward messages from the wotdke appliance to an external controller or a modem, permitting remote sampling of functional values, for example. In this case operating states and collective errors are defined as follows.

Note:

- 15-minute fan after-run “G OFF” counts as operating time.
- Relays R1 and R2 are designed as make-contact (not break-contact) relays (i.e. closed when operated).
- Relay R4 is designed as a break-contact relay (potential-free, 2 A maximum load).

R1 = On/Off signal:

R1 = 0 V → = stove off → message “R1 OFF”
 R1 = 230 V → = in operation → message “R1 ON”

R2 = collective error message

R2 = 0 V → = error → message “R2 OFF”
 R2 = 230 V → = no error → message “R2 ON”

R4 = potential-free On/Off signal (monitored break-contact safety relay):

R4 = closed → = stove off → message “R4 OFF”
 R4 = open → = in operation → message “R4 ON”

Matrix of operating states	Normal operation	Operating error	“Off” via external controller <u>without error</u>	“Off” via external controller <u>with error</u>	“Off” via operating panel and therefore not ready for operation or power failure
State of I/O key on operating panel	ON = ready for operation	ON = ready for operation	ON = ready for operation	ON = ready for operation	OFF = <u>not ready for operation</u>
State of external controller HE at “ON/OFF” input (if connected)	ON or bridged	ON or bridged	OFF (message “HE OFF”)	OFF (message “HE OFF”)	Either ON or OFF
An error has occurred <u>or</u> the appliance is not ready for operation	NO	YES	NO	YES	Either YES or NO, since not ready for operation = error
Voltage at output R1	230 V	230 V	0 V	0 V	0 V
Voltage at output R2	230 V	0 V	230 V	0 V	0 V
State of R4 (break-contact relay)	open	open	closed	closed	closed

Note:

I/O key on the operating panel overrides all other controls = “heater emergency switch” for the pellet stove.

7 Error Analysis, Error Codes, Safety Functions and Safety Devices

All stoves are equipped with numerous safety devices. Errors are classified as class 1 or class 2 errors. **Class 1 errors must be reset manually by pressing the I/O key. Class 2 errors are reset automatically.**

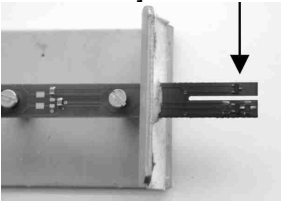
7.1 Overview of class 1 errors & error codes (safety-relevant)



Class 1 errors are indicated by the operating state and error code(s) blinking alternately. The error codes (see table) enable you to identify errors as either component errors or external errors (relating to building installations). The first thing is to remove the cause of the error. Possible causes are described in the following. External errors only occur when the system requirements of our products are not met. Note: as a rule, error codes "TL", "TP", "ST" and "RE Er1" usually indicate external errors.

Note: Do not pull the plug in the event of an error, since this would interrupt the internal safety functions midway! Only pull the plug before performing work on the appliance.

Class 1 errors always trigger the following safety function:

- The **appliance switches to "G OFF" or "Stand By"**, and the fire gradually goes out. Any automatic operation is broken off.
- The **error code** and the message "G OFF" or "stand-by dot" **blink alternately.**
- **After the error has been corrected the appliance must be restarted using the I/O key.**
- **Restart/ Reset after class 1 errors is only possible if the cause of the error has been removed!** In the event of error code "ST" you also have to release the temperature cutoff STB.
- **Press the I/O key once for every error ("Reset" = error acknowledgement),** for ex. in the event of 2 errors press the I/O key twice.

Class 1 error code	Cause of error	Desired values	How to correct error
<p>TL HI = Temperature at air flow sensor in suction pipe too high</p> <p>or</p> <p>TL Grd = Temperature rise TL greater than 40 °C in 120 seconds (gradient).</p> <p>Measuring point: in suction pipe [unheated resistor (see arrow) of air flow sensor]</p>  <p>Photo of foul sensor</p>	<p><u>External error (installation or operating error).</u> Caused by flow reversal in suction pipe.</p> <p>The air flow sensor has heated up beyond the permissible limit. A TL error is also triggered when temperature rises too fast, as this also points to flow reversal in the suction pipe.</p> <p>Possible causes include negative pressure due to ventilation system, exhauster hood or lack of chimney draught or wind pressure via vent pipe (if there is no chimney) or power failure (fan). This error is usually associated with a foul air flow sensor – see picture. If, contrary to the requirements, there is no chimney, this can also occur in the event of a storm with power failure when the wind blows directly into the vent pipe.</p>	<p>TL < 85 °C</p> <p>or</p> <p>TL rises by no more than 40 °C per 120 s</p> <p>Note: When flue gas fan is motionless in stand-by mode, heat radiation from heated resistor can cause TL to rise above room or appliance temperature. For this reason error code TL HI is inactive in standby mode.</p>	<p>This is no hardware error!</p> <p>Let appliance cool off or wait until TL is no longer rising and lower than desired value.</p> <p>Search for and correct external cause. Only then do manual reset via I/O key.</p> <p>Note: If the temperature of the air flow sensor rises to values > 120 °C as a result of flue gas flow reversal, this is interpreted as a component error, and the message LM Er1 appears in the display (see below). If the sensor is still in good order, this error can be reset after temperature has returned to the permissible range.</p>

Error code	Cause of error	Desired values	How to correct error
<p>TR = Temperature at flue gas fan too low. Measuring point: fan. Sensor Pt 1000</p> <p>Picture / case 1</p>  <p>Do not light! First empty pot. See explanation on the right.</p> <p>Picture / case 2</p>  <p>Do not light! First empty pot. See explanation on the right.</p> <p>Case 3: no pellets in burner pot</p>	<p>Temperature sensor at flue gas fan still too low after 21 minutes. Often there are still unburnt pellets in the burner pot.</p> <p>Case 1: False start; burner pot filled with pellets, no flame. temperature TR is not reached</p> <ul style="list-style-type: none"> • burner pot/appliance not cleaned → false start • negative pressure in installation room (causes flow reversal in the ignition system) → false start (often associated with flue gas escaping from the appliance) • ignition cartridge defective → false start <p>Case 2: cause: shutdown in mid-operation, because of too few pellets in the fuel hopper or hopper has run empty (only few pellets in the burner pot)</p> <p>Case 3: cause: appliance has shut down because ambient temperature is too low + calorific output setting is too low. Temperature remains below desired TR during operation.</p>	<p>TR ≥ 49 °C</p> <p>TR Values are sampled continuously starting 21 minutes after the stove start signal. After restart the first sampling again takes place after 21 minutes.</p>	<p>Always empty and clean burner pot before making a new start. Note: Never empty burner pot into fuel hopper – danger of fire through embers! Search for other causes. Ensure sufficient supply of combustion air. Negative pressure in the installation room, whether caused by exhauster hood, house ventilation system or pneumatic conveyor systems, is hazardous and must be avoided. Observe country-specific regulations and separate technical information included in the delivery. Then do manual reset via I/O key. Remedy in case 2: replenish pellets, empty and clean burner pot. Reset and start anew.</p> <p>Remedy in case 3: increase thermal output. Reset via I/O key.</p>
<p>TP = Temperature at pellet chute too high</p> <p>Measuring point: pellet chute Measuring sensor: Pt 1000</p>	<p>External error!</p> <p>Possible causes include negative pressure due to ventilation system or exhauster hood or far too little chimney draught with power failure (fan).</p>	<p>TP < 200 °C (only 6 kW Airplus appliances)</p> <p>TP < 170 °C (all other appliances)</p>	<p>This is no hardware error! Let appliance cool off until TP falls below desired value. Search for and correct external cause. Only then do manual reset via I/O key. See above for more information on negative pressure.</p>
<p>ST = Temperature cutoff (STB) has triggered. Measuring point in Waterplus appliances: capillary sensor parallel to FKY (measuring point for TW) in heat exchanger (mounted) Measuring point in Airplus appliances: capillary sensor on heat reflector plate of fuel hopper Measuring sensor: STB according to DIN 3440: The STB is an obligatory, self-supporting safety component with a control box of its own that works independently of system control.</p>	<p>External error! Temperature of boiler or appliance too high. STB has triggered because temperature is too high (safety function). The cause is almost always external, not due to the appliance, since STB only triggers when heat generated by the appliance is not transmitted.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Waterplus models: not properly bled or operation without water or with wrong connection to domestic water system (no / insufficient heat transmission!!). Check external hydraulics and external controls. • Airplus models: overheating. Check convection inlets and outlets. Reduce thermal output if room temperature too high. 	<p>T_{STB} ≤ 95 °C</p> <p>With Waterplus models the current value can be determined approximately by sampling TW at menu level 1. Sampling is not possible with Airplus appliances.</p>	<p>This is no hardware error!</p> <p>Let appliance cool off until STB falls below desired value. Search for and correct external cause.</p> <p>Only then release STB + do manual reset via I/O key.</p>

Error code	Cause of error	How to correct error
LM Er1 = Broken air flow sensor	Case A: broken air flow sensor (= <u>component error</u>) Case B: <u>external error</u> through flue gas reversal. Temperature of sensor element > 120 °C (see also error description for TL). If sensor heats up to > 120 °C as a result of flue gas reversal, this is interpreted as a component error (breakage) and the message "LM Er1" appears. <u>If the sensor is not permanently damaged, you can switch the appliance on again as soon as the appliance or sensor has cooled off again.</u>	Case A: Replace air flow sensor + reset via I/O key. Case B: No need to replace air flow sensor. Search for rectify external error (see error concerning TL for possible causes) + reset via I/O key.
LM Er2 = Short circuit in air flow sensor	Short circuit = component error	Test air flow sensor and replace if necessary + reset via I/O key.
TR Er1 = Flue gas sensor broken	Breakage = component error	Test TR sensor and replace if necessary + do manual reset via I/O key
TR Er2 = Short circuit in flue gas sensor	Short circuit = component error	Test TR sensor and replace if necessary + do manual reset via I/O key
TP Er1 = Pellet chute sensor broken	Breakage = component error	Test TR sensor and replace if necessary + do manual reset via I/O key
TP Er2 = Short circuit in pellet chute sensor	Short circuit = component error	Test TR sensor and replace if necessary + do manual reset via I/O key
HB Er1 = Operating panel or cable connecting operating panel to main circuit board broken	Breakage = component error	Test operating panel /connecting cable and replace if necessary + do manual reset via I/O key. If display is broken, error message will remain active even if a new operating panel has already been installed. In this case briefly press I/O key to permit recognition of new operating panel.
RE Er1 = Bridge at "auxiliary input" is open	Bridge wire "auxiliary input" is open <u>or</u> error in external component/appliance. Note: The "auxiliary input" is for feedback from external accessories. 15 seconds after every start the system checks whether this input is bridged, i.e. closed, and the preheating programme is only started if this is the case. The "auxiliary input" is constantly monitored. Opening of the bridge at the "auxiliary input" results in an error shutdown / activates the safety function (class 1 error). Application examples (see also assembly instructions): 1) Flue gas exhaust flap: If a mechanical or motorised exhaust flap is used, you can connect the make-contact from this flap to the auxiliary input. The pellet stove will then only start up if the exhaust flap is open. Any error at the exhaust flap will cause the appliance to shut down through a safety function. If the motorised exhaust flap is not completely open within 15 seconds, this will trigger an error message due to delayed feedback to the appliance. 2.) Inlet flap for combustion air: function, use and wiring as with an exhaust flap. 3) Disable function through ventilation system / exhauster hood: If the ventilation system or exhauster hood has a potential-free output as operating signal , this output can be connected to the auxiliary input as a break-contact . In this case the pellet stove will only go into operation when the exhauster hood / ventilation system is not in operation. All the above applications can be <u>connected in series</u> , and the pellet stove will then only go into operation if all external devices are working properly and <u>shut down as soon as an error occurs in any one of them</u> .	Check bridge wire at "auxiliary input" and mount correctly. If you are using an external device, check its wiring and function (especially make-contacts) and replace as necessary. Then do a manual reset via I/O key. Note: To do a reset and restart after error message RE Er1, make sure that the "auxiliary input" has been bridged again (contact closed). Note: If external devices are connected in series, you have to check all devices and the entire external wiring.

Error code	Cause of error	How to correct error
HP Er1 = Main circuit board defective (24V digital inputs "ON/OFF", "MIN/MAX", „auxiliary input“) or one or several of these 24 V digital inputs misconnected.	The board's internal 24V supply is no longer available at one or several of the digital inputs "ON/OFF", "MIN/MAX" or "auxiliary input". Case A: One or several digital inputs have been misconnected (earthed) or external controllers defective. Case B: one or several digital inputs are defective or broken (cold joint etc.)	Case A: Check wiring and external controllers for all three inputs (using a simple bridge wire), replace if necessary + reset via I/O key. Case B: Replace main circuit board. Note: Make sure that the new board is compatible with its appliance (correct kW rating and programme version)
HP Er2 = Reference temperature sensor on main circuit board defective	Component error: reference temperature sensor on main circuit board defective	Replace main circuit board
HP Er3 = Write / Read error by EEPROM on main circuit board	Data have not been read correctly (one-time transmission error while writing data to / reading data from EEPROM on main circuit board) or cannot be read at all (EEPROM error).	Reset via I/O key and restart. If error HP Er3 occurs repeatedly or if it cannot be reset, you will need to replace the main circuit board. ¹
R4 Er1 = Auxiliary output 4 defective	Component error: safety relay defective	Replace main circuit board

7.2 Overview of class 2 errors & error codes (not safety-relevant)

Class 2 errors are of secondary importance (not safety-relevant) and there is no need for a manual reset once the cause of the error has been eliminated, since the appliance will automatically resume regular operation.

Class 2 error code	Cause of error	Desired value	How to correct error
L- LO = Air flow in suction pipe too low; "L- LO" and the relevant programme message blink alternately. Measuring point: Air flow sensor in suction pipe [= two resistors, one permanently heated, in bridge circuit. Cooling dependent on air flow speed]	External error / Operating error! Air flow in suction pipe below permissible minimum for longer than 5 seconds. This can happen when the firedoor is opened → no air flow through suction pipe Other possible cause: The air flow may also be blocked by extreme soiling of the flueways or connection piece.	L > 2.0 Values are sampled continuously starting 1 minute after start-up. After restart the first sampling again takes place after 1 minute.	This is no hardware error! Close firedoor (if open) or search for other cause (for ex. inspection hole open, door not tight). Service and clean as necessary. Appliance will resume operation in previous programme as soon as the error has been eliminated. Exception: Temperature of flue gas has dropped. In this case the message "TR" appears → see class 1 error codes.
TW Er1 = Internal boiler sensor broken <u>Only possible in Waterplus models!</u>	Breakage = component error		Appliance continues operation / pump switches to continuous operation. Error message is deactivated as soon as sensor has been replaced.
TW Er2 = Short circuit in internal boiler sensor <u>Only possible in Waterplus models!</u>	Short circuit = component error		Appliance continues operation / pump switches to continuous operation. Error message is deactivated as soon as sensor has been replaced.

¹ Service technicians can try to reload the wtk file into the stove using PC-Tool 2 as a last resort.

7.3 Internal control functions “H.M” and “TW OFF”

These functions have already been described in detail in sections 0 and 0 in the Chapter on Operation. They are summarised here again in brief since they are also used for monitoring operating safety and are significantly influenced by external parameters. These are control functions, not actual errors, since they are the way the appliance responds to external influences / operating parameters.

Control function / message	Cause	Desired value	How to correct error
<p>H.M = Internal Modulation; see also Chapter 0</p> <p>This is a control function rather than an error.</p>	<p>The temperature limits for the exchanger, TW, or flue gas fan (TR) have been exceeded, and the appliance powers down to minimal load until the limit values are met again. This is a control function (not an error), which can be activated, for ex. by excessive flow temperature (too little heat transfer via water) or use of pellets with excessive calorific value (average output above nominal thermal output) or high ambient temperatures.</p>	<p>TR_{max} < 200 °C with 6 K hysteresis (all models) and for Waterplus models additionally TW < 75 °C with 6 K hysteresis</p>	<p>As soon as functional values have dropped to desired range, allowing for hysteresis, appliance will automatically jump from “H.M” modulation to preset output level. Thus, TR must have dropped to ≤ 194 °C. TW must have dropped to ≤ 69 °C.</p>
<p>TW OFF = Appliance shutdown due to excessive temperature in heat exchanger (see also 0) Only in Waterplus models!</p> <p>“TW OFF” and “G OFF” blink alternately for duration of fan after-run. Measuring point: internal boiler sensor (heat exchanger) FKY.</p> <p>This is a control function rather than an error.</p>	<p>Control function or external error.</p> <p>Temperature in heat exchanger (TW) above desired value.</p> <p>Appliance switches from fan after-run “G OFF” to “TW OFF”.</p> <p>The cause is almost always external, not due to the appliance, since TW only triggers when heat generated by the appliance is not transmitted. This can happen, for ex., when the heat demand of a single-storey heating system without storage drops to zero. TW OFF then serves as a control function.</p>	<p>TW < 85 °C</p> <p>11 K hysteresis</p>	<p>Appliance restarts automatically as soon as TW has dropped to ≤ 74 °C.</p> <p>If “TW OFF” occurs frequently, check the domestic water system.</p>

7.4 Burn-back protection

Burn-back protection is provided by a number of mechanisms, some of which are protected by registered design or patent rights. All wotke appliances are equipped with a unique **fivefold protection** against burn-back into the fuel hopper, consisting of pellet chute cooling, wotke air flow sensor technology, temperature cutoff (STB) and a temperature sensor in the chute. This goes far beyond even the most stringent legal requirements.

7.5 wotke air flow sensor technology

Located in the central suction pipe is an air flow sensor which measures the current air flow velocity in the suction pipe, compares it with the set desired values and automatically corrects deviations by increasing or decreasing the speed of the flue gas fan. In this way the appliance automatically adjusts itself, within its range of control, to changes in chimney draught, internal resistance (for ex. soiling of flueways or burner pot) and varying air suction resistance and is provided with an optimal air flow at all times.

Note:

As a consequence of wodtke air flow sensor technology the appearance of the flames may change with changing draught conditions in the chimney and air temperature because the speed of the fan varies in response to these parameters. This is perfectly normal and in no way a shortcoming. It is rather this very feature that makes for optimal combustion.

The air flow sensor system also responds to the firedoor being opened, interrupting the pellet supply. This makes it impossible to operate the appliance with the door open and classifies it as design type 1 (self-closing door), permitting several stoves to be operated with one chimney if this is suitably designed.

The air flow sensor also permits the temperature of the air flow sensor (TL) in the suction pipe to be measured. Any temperature increase beyond the desired range, and any temperature increase that is too fast (gradient), will trigger an error shutdown.

7.6 Temperature sensor at pellet chute (TP)

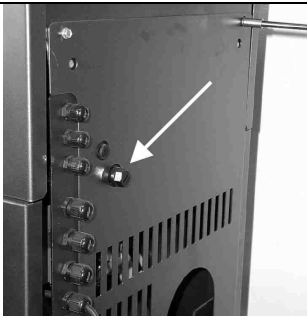

Located directly in the pellet chute is a temperature sensor which monitors the temperature towards the fuel hopper. Any temperature increase beyond the desired range entered into the software will trigger an error shutdown.

7.7 Temperature sensor at flue gas fan (TR)

Located directly at the flue gas fan is a temperature sensor which monitors the temperature. Any temperature increase beyond the desired range entered into the software will cause the appliance to go into modulation mode "H.M" (minimal output) → see also Chapter 0. Pellets with a high calorific value or bulk density can cause the actual thermal output of the appliance to exceed its nominal output. This is detected by TR and duly compensated. The appliance is then modulated to run at minimum load until it meets the prescribed values again.

7.8 Temperature cutoff (STB) + main fuse

The temperature cutoff is a mandatory safety device which switches off the appliance in the event of excessive overheating and then has to be released manually. The location of the release differs between models. The main fuse of the appliance is always located close to the STB.

Position of STB + main fuse (5A, quick-acting)	Position of STB + main fuse (5A, quick-acting)
"CW 21", "Smart", "Topline", "Frank"	Series "PE"
Underneath black screw cap on rear panel of stove	On the right behind the inlet grille
	

The STB can be released with a pointed object as soon as the appliance has cooled down sufficiently. If the STB doesn't stay pressed in, the temperature is still too high and the appliance should be allowed to cool further before making another attempt.

8 Cleaning and Care

Unlike oil or gas, solid fuels always leave ash and soot behind when combusted. **Regular cleaning by the operator is therefore indispensable for ensuring trouble-free operation.** The residues of wood combustion are completely harmless. Pellet ash is an entirely natural product and suitable for fertilising all types of indoor and outdoor plants.

Caution / Danger:

Appliances that are not cleaned according to our instructions must not be operated. Disregard of this note voids all warranty claims.

The required frequency of cleaning the burner pot depends exclusively on the ash content of the pellets and cannot be changed through adjustments on the appliance, since ash is simply the total of non-combustible pellet constituents!

We therefore recommend using wood pellets with an ash content < 0.5%.

Like any solid fuel would, but all the more so on account of their very fine ash, wood pellets will cause a deposit to form on the viewing window, which can vary in appearance from very bright to dark black (the latter especially in the event of low-load operation). This is a natural process that results from the combustion of wood pellets and in no way a shortcoming.

Caution!

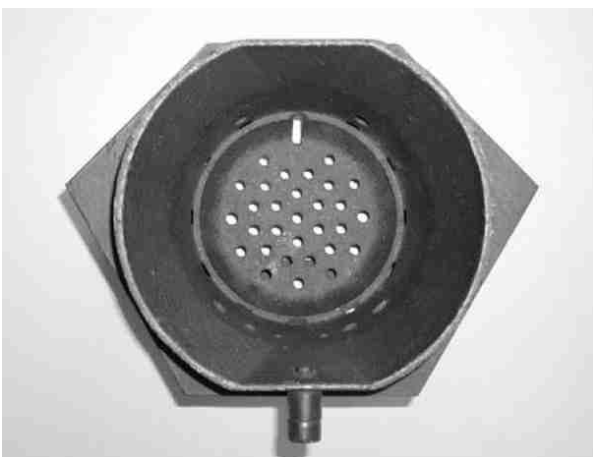
Before starting on any kind of care routines switch the stove off and let it cool off. Please also observe the safety instructions on the hopper lid. Any part of the firebox may still be hot. The ash might still contain glowing embers. Never fill unburnt pellets or ash from the fire box back into the fuel hopper – danger of fire!

8.1 Inspecting and removing the ash from the burner pot

Please **inspect the burner pot for combustion residues (ash, slag) every day**, yet at least every time when filling the fuel hopper. Clean the burner pot using the ash scraper delivered with the appliance at the latest when 30 g of ash/slag have accumulated in the burner pot (residue layer of approx. 3 cm – see photo).

Clean burner pot

air holes and ignition air slit free

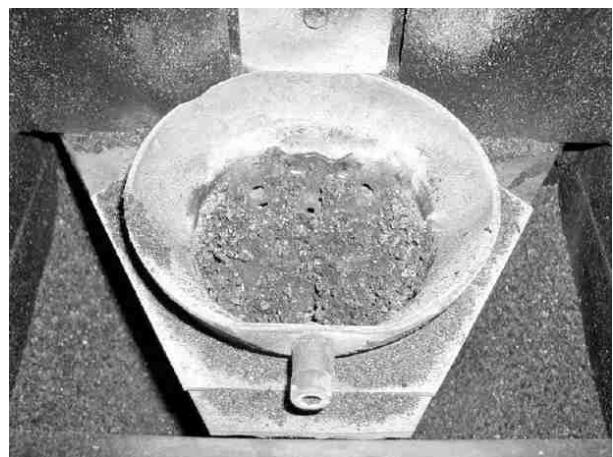


→ ignition effective
→ long maintenance intervals

→ clean combustion
→ high efficiency

In need of cleaning

burner pot filled with 30 g ash/slag



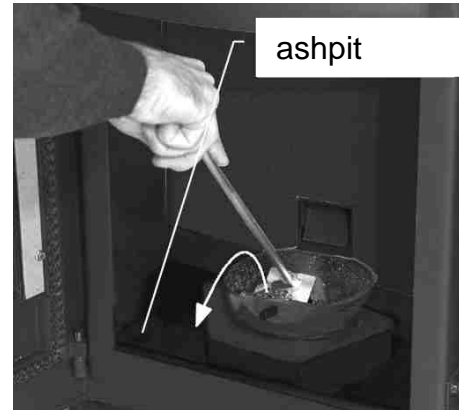
→ ignition air slit clogged
→ poor combustion

→ no/poor ignition
→ frequent maintenance

Removing the ash from the burner pot can be done in a few seconds, and even during operation. Using the scraper draw the ash out of the burner pot until only a few embers remain. Let the ash drop into the ashpit.

Important information:

- Do not compact or crush the ash in the burner pot, since this would clog up the air holes. Instead draw the ash out of the pot with the ash scraper, as shown on the right.
- All air holes in the burner pot must remain free, so that the pellets are sufficiently exposed to combustion and ignition air.
- Clean the burner pot when the air holes are clogged (see below – Chapter 8.2).



8.2 Cleaning the burner pot, the pot holder and the ashpit

Regularly clean the ashpit by removing the ash left and right of the pot holder. This should be done at the latest when the ash in the ashpit has reached the level of the pot holder. **First switch the stove off and let it cool sufficiently.** Before cleaning remove the pot from the pot holder. It is not fastened, so you can just lift it out. Clean burner pot (air holes), pot holder (pot resting surfaces) and ashpit. Make sure you clean the pot resting surfaces on the pot holder thoroughly. It is advisable to use the wodtke ashbox for sucking off the ash.

Important notes: When inserting the burner pot again make sure it rests fully on the pot holder. Clean again if this is not the case. Check that the burner pot is firmly seated in the pot holder and doesn't side-wobble by more than 1-2 mm – if it does, you will need to replace the burner pot (wearing part). The "burner nose" must point forward.

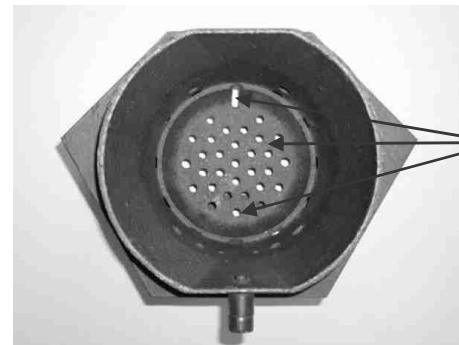
➔ **Caution: The burner pot can remain hot for a long time – danger of burning yourself!**

➔ **Don't use your bare hands – use tools!**

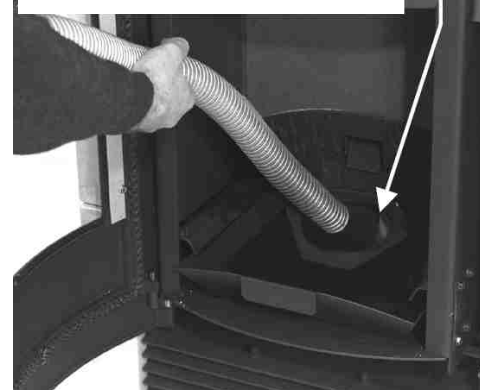
➔ **Caution: acute danger of fire!!!**

Glowing embers in the ash pose an acute fire hazard. Only suck the ash into a vacuum bag if you are completely sure that it does not contain glowing embers. To reduce the fire hazard we recommend you to use our **ashbox** as an adaptor for your vacuum cleaner.

Clean all the air holes of the burner pot using, for ex., a screwdriver.



Clean pot holder and pot resting surfaces



wodtke ashbox

8.3 Cleaning the viewing window

If a deposit forms on the viewing this is normal and in no way a shortcoming. You can easily clean the viewing window with a dry cloth. Heavy soiling can be removed with wodtke special glass cleaner.

Note: wodtke special glass cleaner is an aggressive agent and may only be used for cleaning the viewing window. Please observe the safety instructions on the package. Drops spilt on the floor should immediately be removed with plenty of water, since they might otherwise leave spots behind.

8.4 Cleaning the surfaces

Paint surfaces should only be cleaned when the paint has dried completely, as they may otherwise get scratched. Clean the surfaces gently with a damp cloth. Do not use scouring agents, nor glass or any other solvent-containing cleaning agent.

Powder-coated surfaces should be cleaned gently with a damp cloth, not scoured. Do not use scouring agents or other acid or caustic cleaning agents. Persistent spots will usually yield to a commercial glass cleaner.

Stainless steel should best be cleaned with our special stainless steel cleaning spray or with special stainless steel cleaning agents. Gently wipe surfaces with a damp cloth; do not scour. Do not use scouring agents or other acid or caustic cleaning agents.

Decorative glazing and glass cladding should be wiped gently with a damp cloth and commercial glass cleaner, not scoured. Persistent spots will usually yield to a commercial glass cleaner. **Do not use wodtke special glass cleaner for this purpose**, since this agent is only suitable for cleaning the viewing window and could affect or damage coloured prints.

Ceramic cladding should best be cleaned with our special tile cleaner or a damp cloth. Gently wipe surfaces with a damp cloth; do not scour. Do not use scouring agents or other acid or caustic cleaning agents.

9 Servicing

We advise you to have your appliance serviced only by a duly qualified company. The proper functioning of your appliance depends decisively on whether it is properly and regularly serviced. The required servicing frequency in turn depends on pellet quality and on whether the appliance is regularly cleaned by the user. Every wotdke appliance is delivered with a special brush for servicing. **Soot is an excellent insulator, and appliances that are not serviced therefore tend to deliver less and less heat to the surroundings or to the heat exchanger, thus losing thermal efficiency. Servicing allows your appliance to regain its optimal energy efficiency, saving you heating costs and sparing the environment.**

Caution / Danger:

Appliances that are not serviced according to our instructions must not be operated. Disregard of this note voids all warranty claims.

Have the appliance serviced by a duly trained technician at the latest when “WA” appears in the display. “WA” appears after a throughput of 1.5 tons of pellets following the last reset. The number below “WA” states for how long servicing has been overdue. “WA” can be reset from **menu level 1** after servicing (see Chapter **Fehler! Es wurde kein Textmarkenname vergeben.**), and the counter then starts counting again from 1500 kg. At **menu level 1** you can also inquire how many kg of standard pellets can still be burnt before servicing is due again (see Chapter 0). Note: See Chapter 0 on how to do a service reset.

Note: Servicing may become necessary before “WA” appears, especially if the pellets have an ash content greater than 0.5% or the burner pot has not been cleaned regularly (see Chapter 0)!

Some tips of advice:

- **Ask your supplier to confirm the ash content of your pellets in writing. This is a significant determinant of servicing frequency. High-quality pellets usually have an ash content of no more than about 0.2 to 0.3%!**
- **Clean the burner pot regularly (see Chapter 0)**
- **Make a service contract with your dealer.**

Example of the influence of pellet quality on servicing frequency:

Our recommended service interval of 1500 kg of pellet throughput refers to high-quality pellets with an ash content of 0.25%. An ash content of 0.5% (i.e. twice as high) shortens the service interval to 750 kg because twice the amount of ash and soot will arise per unit of pellet weight. An ash content of 1% (i.e. 4 times higher than normal) accordingly reduces the permissible throughput between servicings by a factor of 4, i.e. to 375 kg. This is not reflected in the display, since this only refers to standard pellets. A duly qualified technician is able to recognise a need for servicing ahead of time by elevated fan speed, low thermal output to water (only in Waterplus appliances) or elevated flue gas temperature.

wotdke appliances perform electronic calculations of pellet consumption etc. using formulas based on the following definition of standard pellets: **Standard pellets** have a **diameter of 6 mm**, a uniform **length of 1 cm**, a **bulk density of 650 kg/m³** and an **ash content of 0,25%**. In practice these values vary between pellet brands as well as between delivery batches, and the actual amount of pellets consumed can therefore deviate from the value shown in the display. Note: Internal data processing (rounding of operating cycles) by the appliance can result in numerical deviations in counter readings by up to 10%.

Prior to servicing the burner pot, pot holder and firebox should all be thoroughly cleaned (for cleaning instructions see Chapter 0).

Servicing should only be done after cleaning.

Servicing comprises the following work, as described in detail in the following chapters:

- Cleaning the **flueways (described in detail for each model / series)**
- Cleaning the **flue gas fan + flue gas connector to chimney (identical for all models)**
- Inspecting the **combustion air pipe (identical for all models)**
- Cleaning **electrical components/contacts (identical for all models)**
- Cleaning **convection air ducts (identical for all models)**
- Cleaning the **pellet chute (identical for all models)**
- Completing all work, followed by **test run** and **service reset (identical for all models)**.

These service routines require special skills, and we therefore urgently advise you to have them done by a duly qualified company.

In addition to the special brushes supplied with the appliance a servicing kit should include the following:

- vacuum cleaner (we recommend our ashbox as an adaptor)
- cross tip screwdriver
- set of hexagon socket screw keys, set of flat spanners
- pliers
- torch
- small mirror

Tip:

Cover the floor in front of and underneath the appliance generously with cardboard or the like to avoid damage or soiling. Wear appropriate clothing for the job and carefully read all the following instructions before you start.

Caution / Warning:

Danger of fire, short circuit, or of losing your life!

wodtke appliances may only be operated with all panels properly mounted; disregard of this voids the approval given for the appliance as well as all warranty and guarantee claims because it creates a danger of touching live or hot parts.

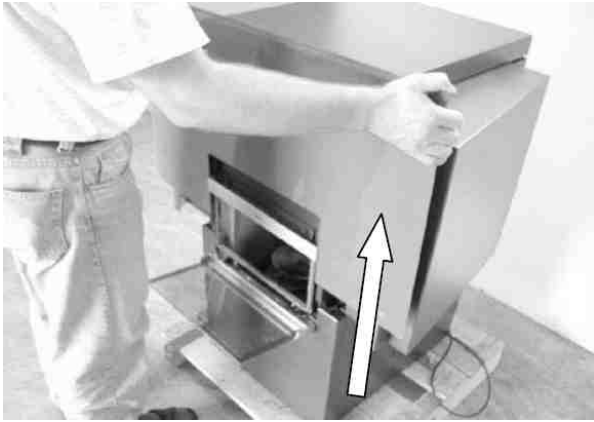
Pull the mains plug before starting work

and

only plug it in again for the test run and service reset after all panels have been fully and properly mounted.

9.1 Cleaning the flueways on Airplus appliance "CW 21"

1. **Carefully** remove front panel by pulling it upwards, taking care not to damage the glass. Open the fire door and fuel hopper lid.



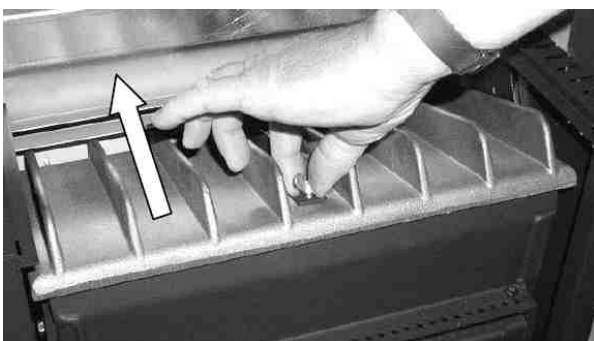
2. Release the middle screw and remove the slanted service cover by pulling it towards you.



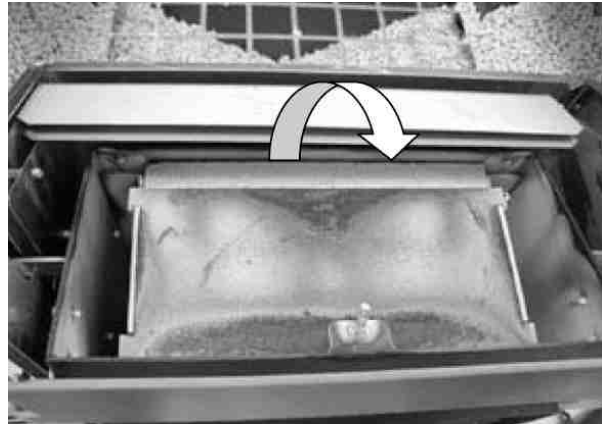
3. Release wing nut on cast metal lid and remove fixing clamp.

Note: Make sure you remount fixing clamp correctly when reassembling!

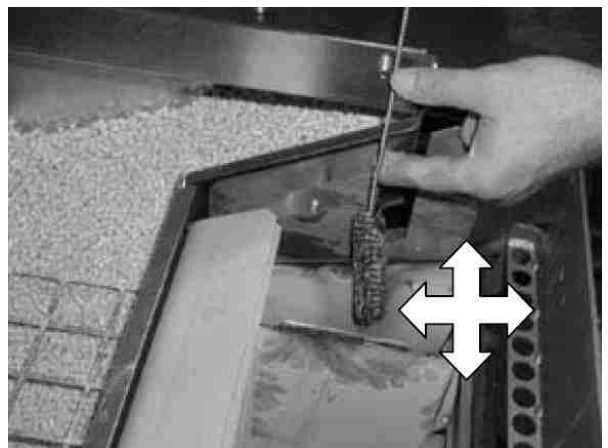
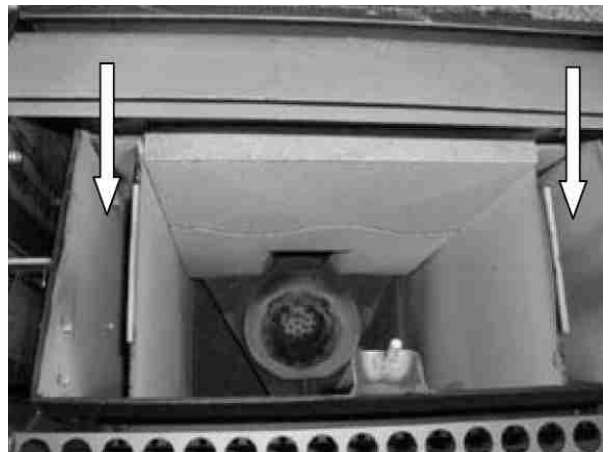
Lift off cast metal lid and remove.



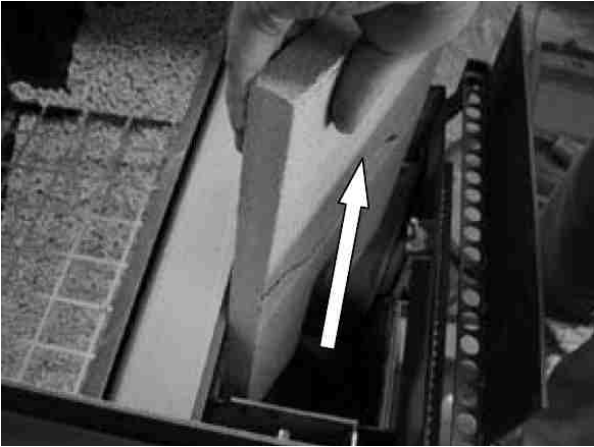
4. Lift upper deflection plate and remove.



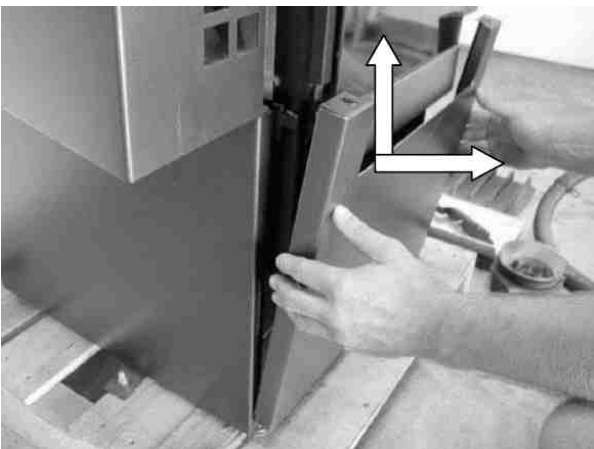
5. Clean l + r flueways with cleaning brush.



6. Remove chamotte and clean rear stove wall.

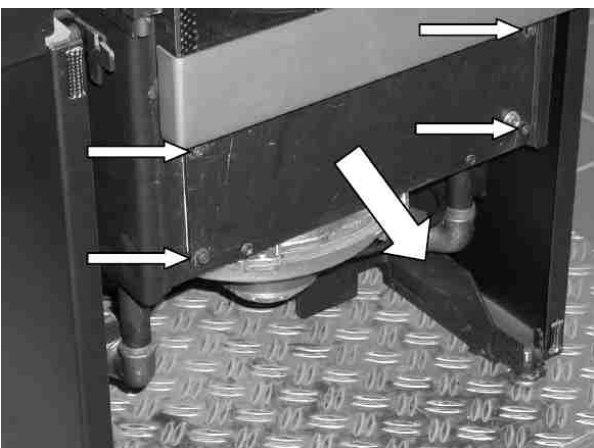


7. Remove lower front panel.

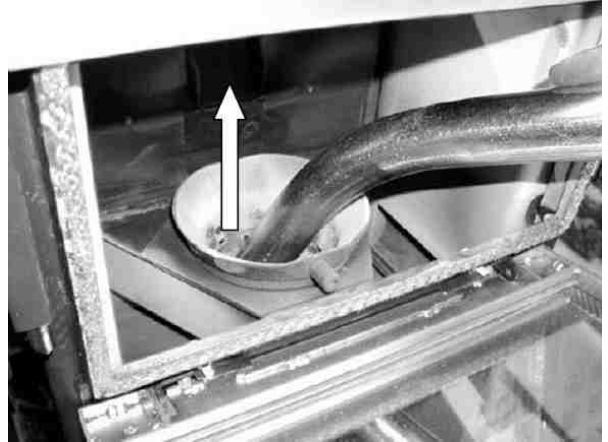


8. Release screws of front inspection lid and remove inspection lid. Make sure the sealing is correctly seated when reassembling.

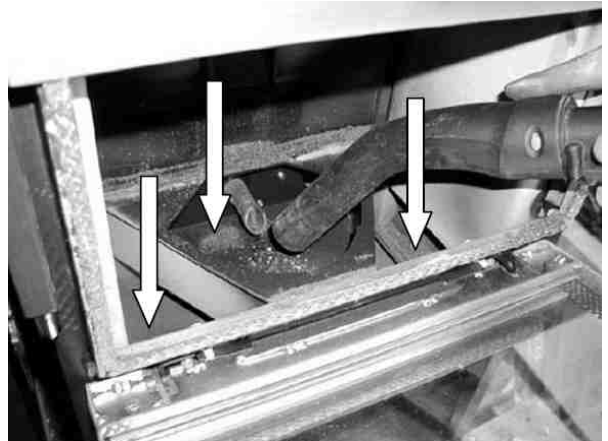
⚠ Mind hot ash and hidden glowing embers!



9. Vacuum burner pot. Lift burner pot out and clean. Clean combustion air holes with a suitable implement (screwdriver) if necessary.

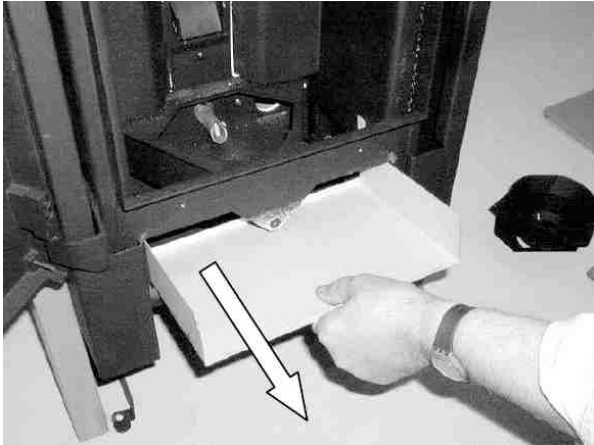


10. Vacuum pot holder and base plate thoroughly.

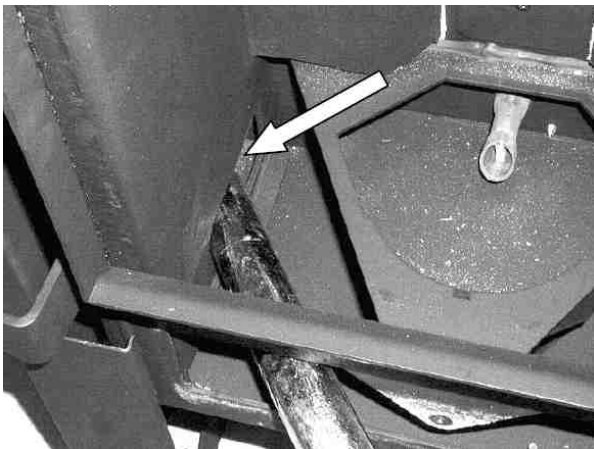


Important notes: When inserting the burner pot again make sure it rests fully on the pot holder. Remove any combustion residues on the pot or pot holder. Check that the burner pot is firmly seated in the pot holder and doesn't side-wobble by more than 1 to 2 mm – if it does, you will need to replace the burner pot (wearing part). The "burner nose" must point forward.

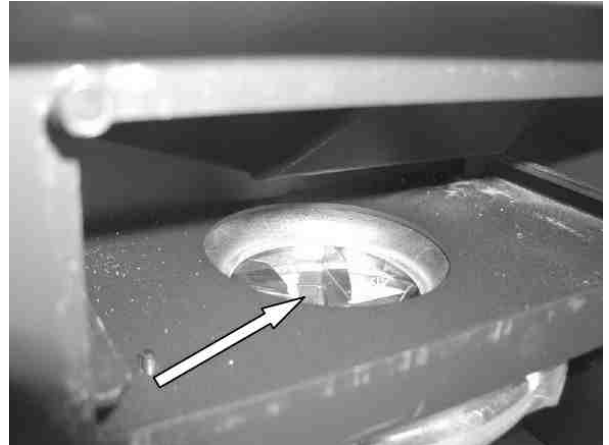
11. Pull base plate out towards you and clean .



12. Vacuum flueways thoroughly.



13. Inspect flue gas fan for soiling.



Only clean the fan **if necessary** (see Chapter 9.10).

See Chapter 9.10 for further service procedure.

9.2 Cleaning the flueways on Airplus appliance "Smart"

1. Open the firedoor. Lift upper panel and remove.



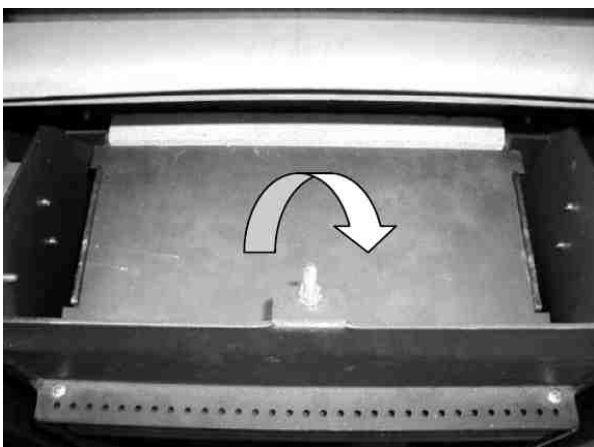
2. Release wing nut on cast metal lid and remove fixing clamp.

Note: Make sure you remount fixing clamp correctly when reassembling!

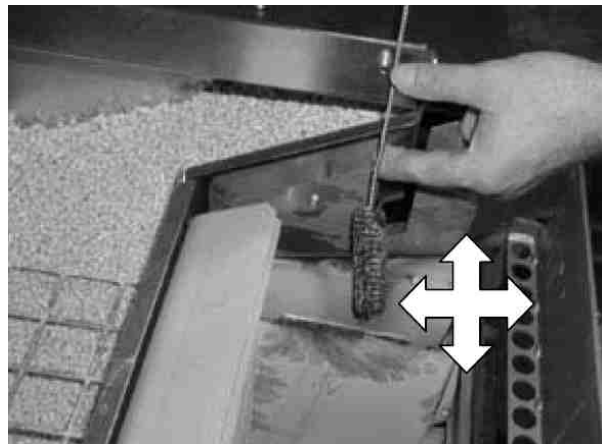
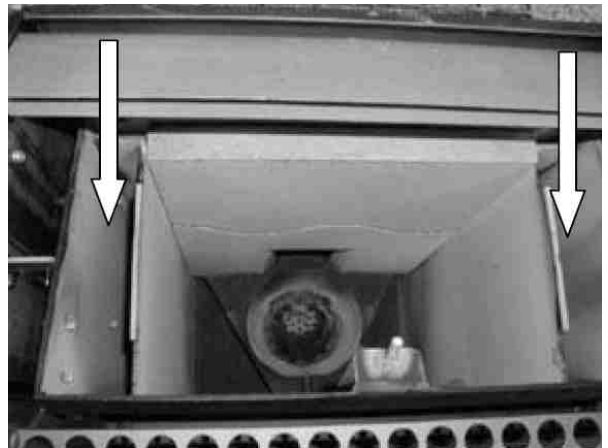
Lift off cast metal lid and remove.



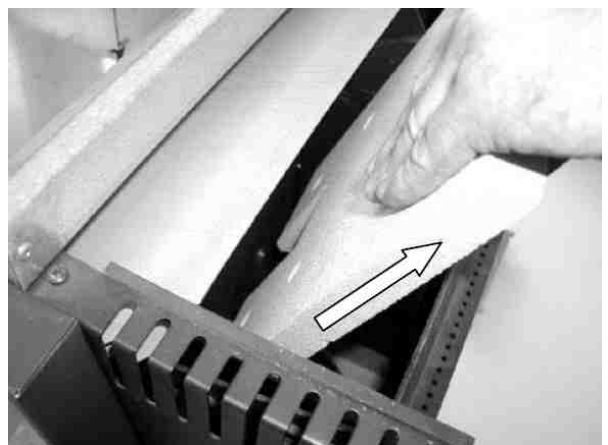
3. Lift upper deflection plate and remove.



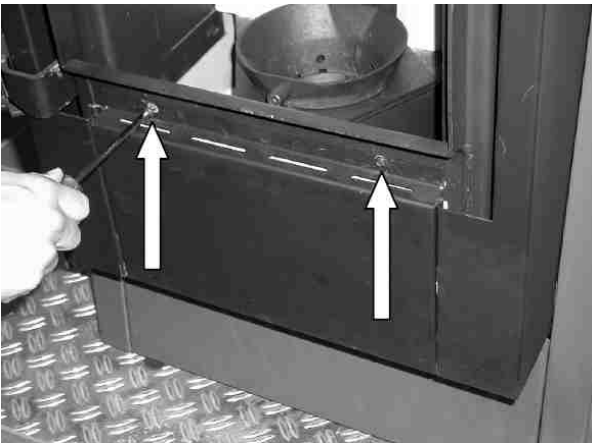
4. Clean l + r flueways with cleaning brush.



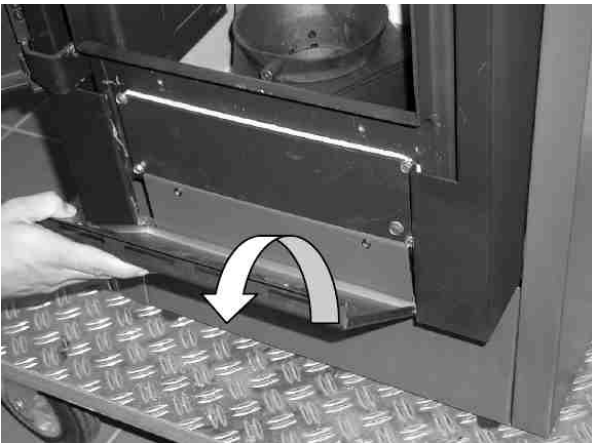
5. Remove chamotte and clean rear stove wall.



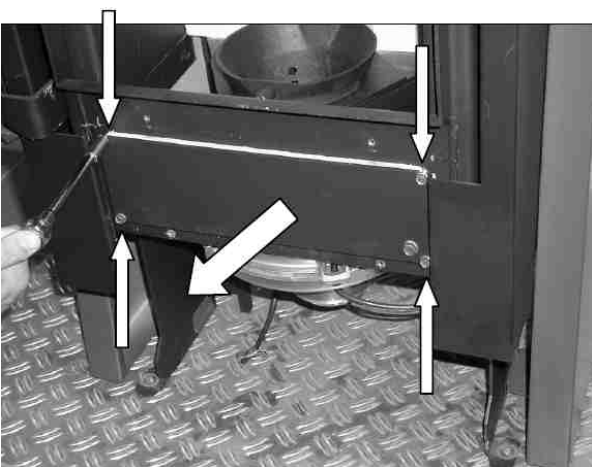
6. Release both screws of inspection cover.



7. Remove inspection cover.



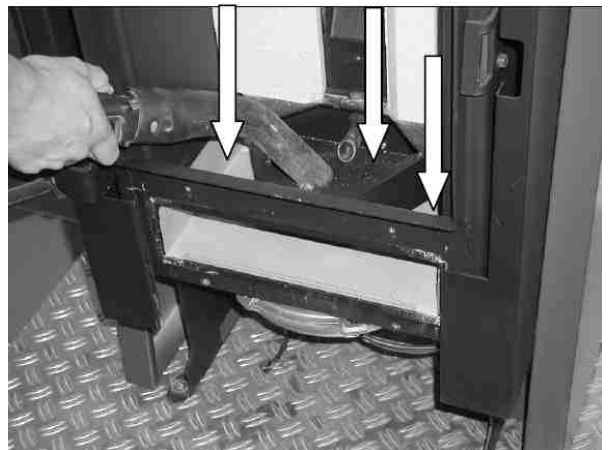
8. Release the four screws of front inspection lid and remove inspection lid. Make sure the sealing is correctly seated when reassembling.



9. Vacuum burner pot. Lift burner pot out and clean. Clean combustion air holes with a suitable implement (screwdriver) if necessary.



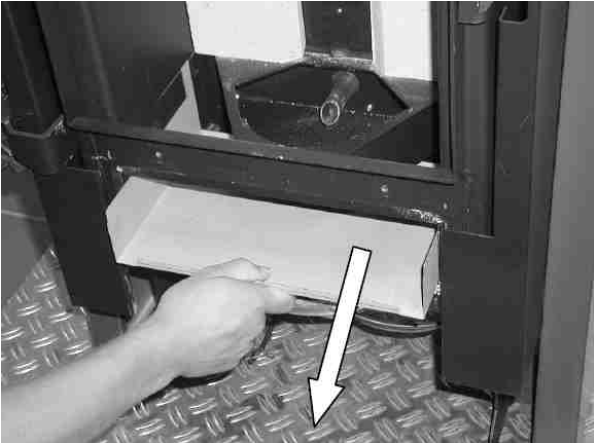
10. Vacuum pot holder and base plate thoroughly.



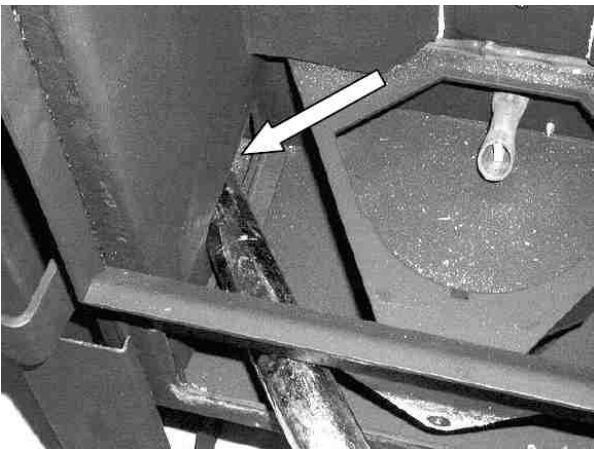
Important notes: When inserting the burner pot again make sure it rests fully on the pot holder. Remove any combustion residues on the pot or pot holder. Check that the burner pot is firmly seated in the pot holder and doesn't side-wobble by more than 1 to 2 mm – if it does, you will need to replace the burner pot (wearing part). The "burner nose" must point forward.

⚠ Mind hot ash and hidden glowing embers!

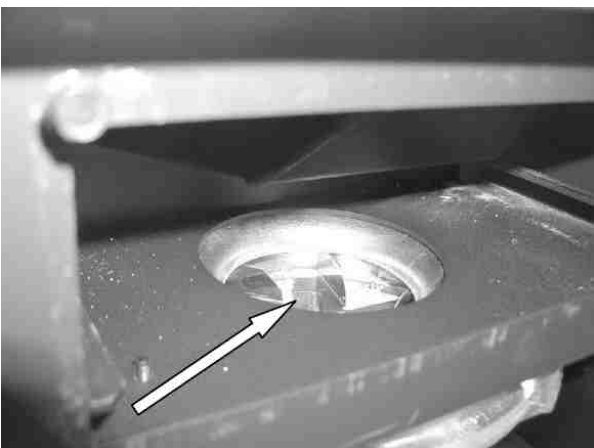
11. Pull base plate out towards you and clean.



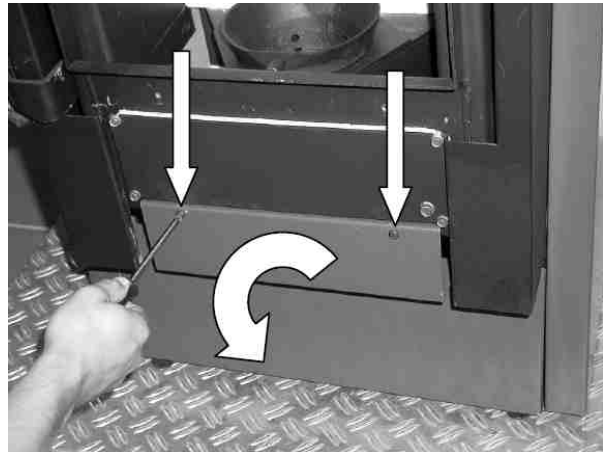
12. Vacuum flueways thoroughly.



13. Inspect flue gas fan for soiling.



14. Only if flue gas fan requires cleaning:
Release both screws of cover and remove cover.

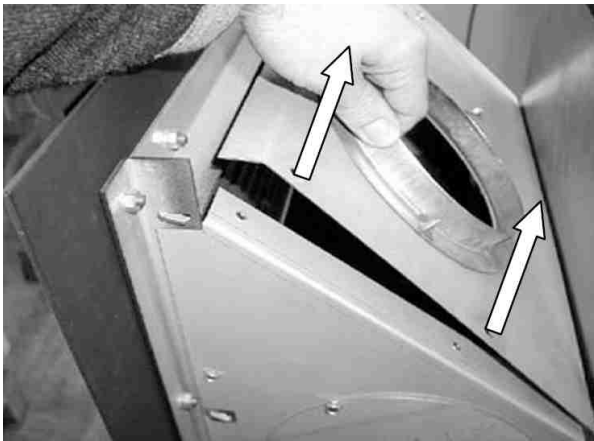


Clean fan (see Chapter 9.10).

See Chapter 9.10 for further service procedure.

9.3 Cleaning the flueways on Airplus appliance "PE"

1. Pull out insert stove PE towards you, out of its casing. If necessary, first remove base plate from in front of stove and cover floor if sensitive (otherwise rollers might damage floor!). Open the firedoor.
2. Release the 4 screws on the upper cover and remove cover.



3. Release wing nut on cast metal lid and remove fixing clamp.

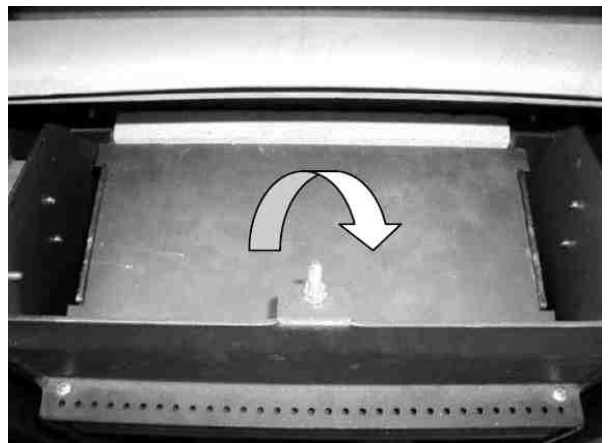
Note: Make sure you remount fixing clamp correctly when reassembling!



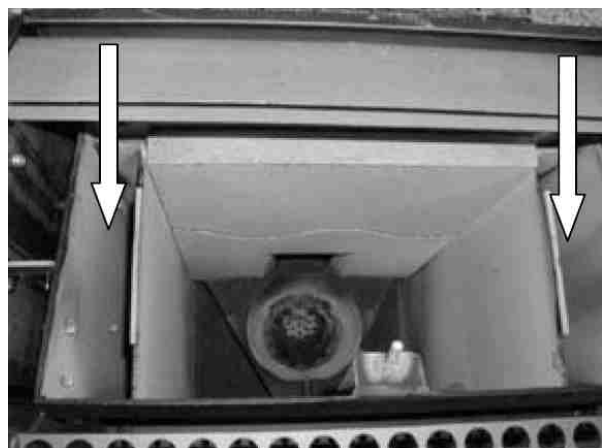
4. Lift off cast metal lid and remove.

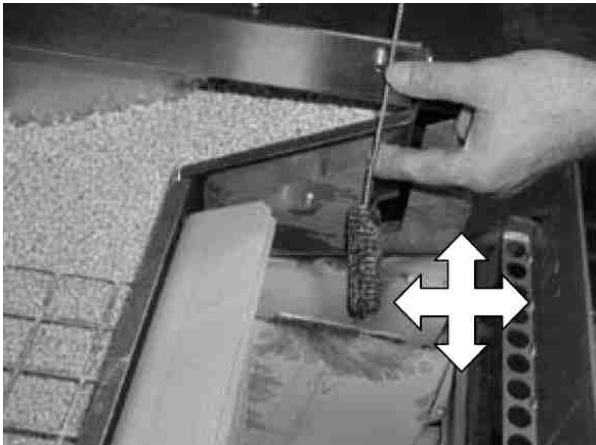


5. Lift upper deflection plate and remove.

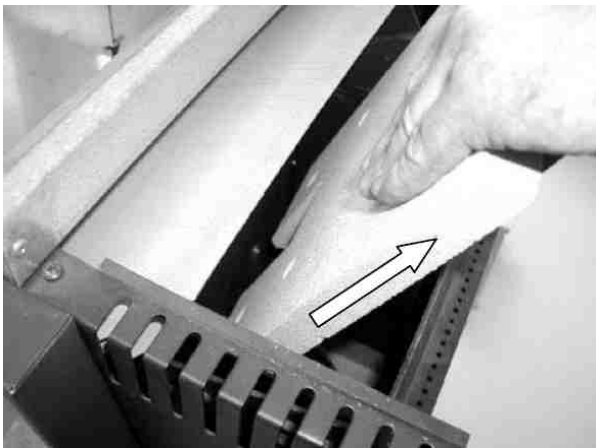


6. Clean l + r flueways with cleaning brush.

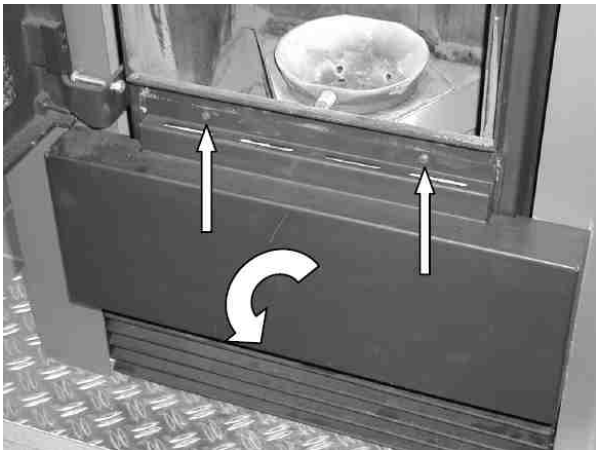




7. Remove chamotte and clean rear stove wall.

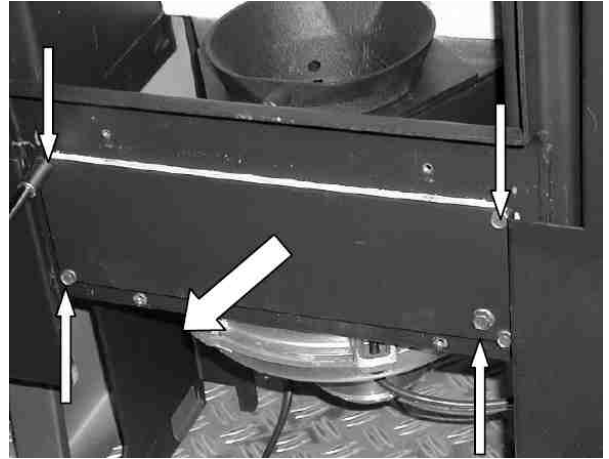


8. Release both screws of inspection cover.

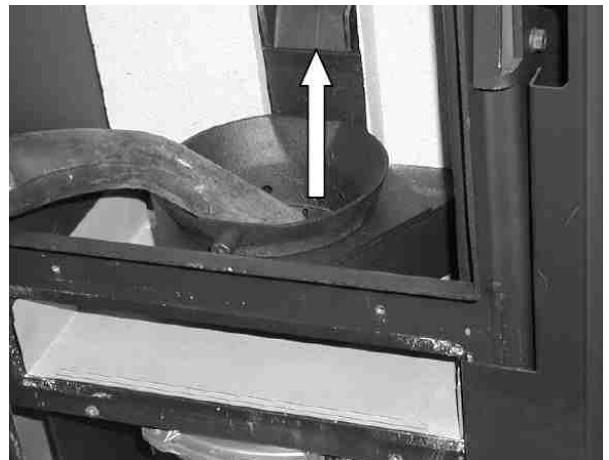


9. Release the four screws of front inspection lid and remove inspection lid. Make sure the sealing is correctly seated when reassembling.

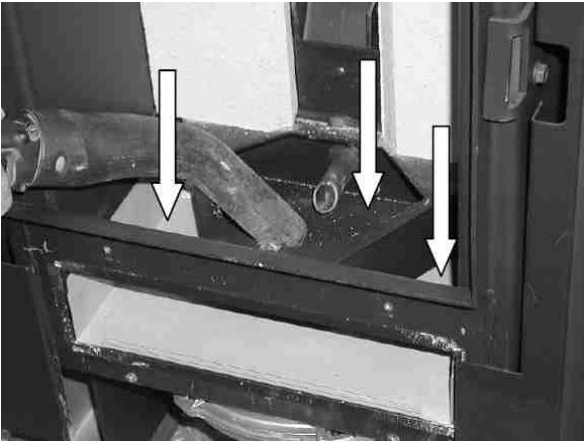
⚠ Mind hot ash and hidden glowing embers!



10. Vacuum burner pot. Lift burner pot out and clean. Clean combustion air holes with a suitable implement (screwdriver) if necessary.

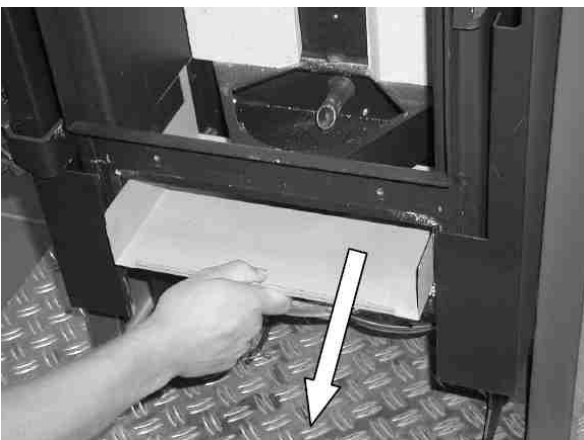


11. Vacuum pot holder and base plate thoroughly.

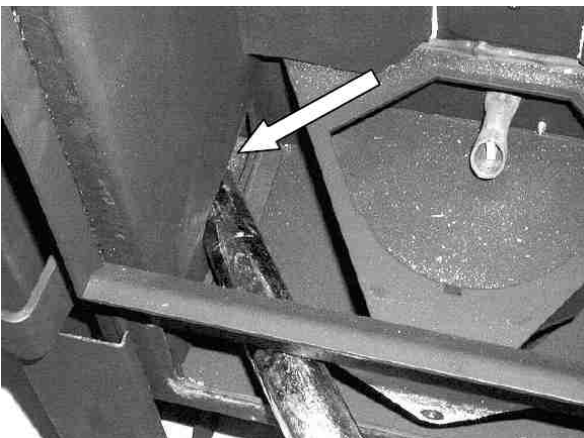


Important notes: When inserting the burner pot again make sure it rests fully on the pot holder. Remove any combustion residues on the pot or pot holder. Check that the burner pot is firmly seated in the pot holder and doesn't side-wobble by more than 1 to 2 mm – if it does, you will need to replace the burner pot (wearing part). The "burner nose" must point forward.

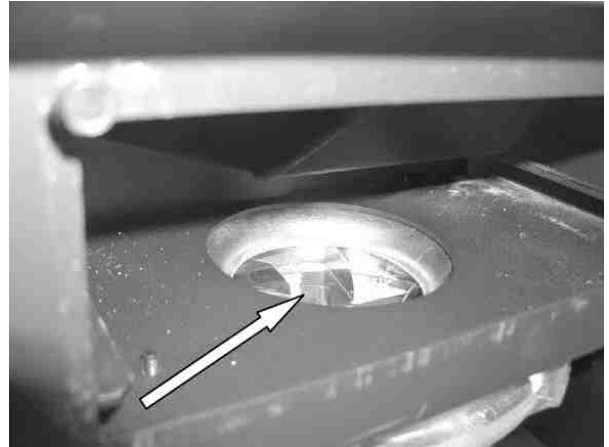
12. Pull base plate out towards you and clean.



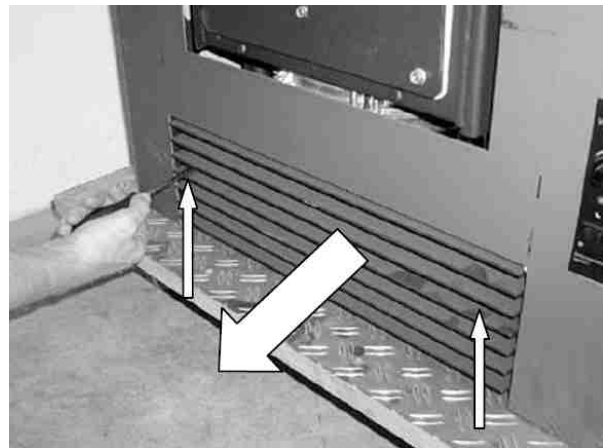
13. Vacuum flueways thoroughly.



14. Inspect flue gas fan for soiling.



15. **Only if flue gas fan requires cleaning:** Release both screws of cover and remove cover.



Clean fan (see Chapter 9.10).

See Chapter 9.10 for further service procedure.

9.4 Cleaning the flueways on Airplus appliance "Frank"

1. Open the firedoor. Lift upper panel and remove.

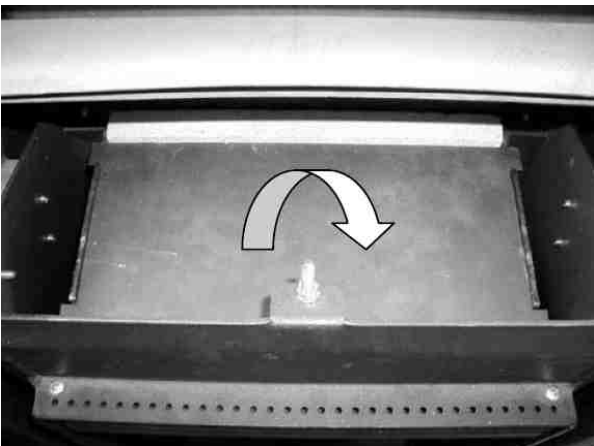


2. Release wing nut on cast metal lid and remove fixing clamp.

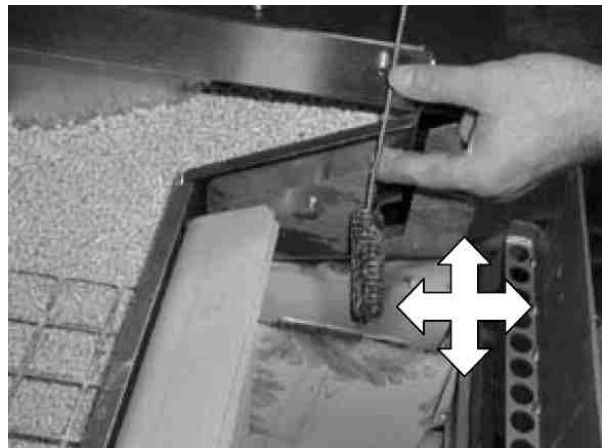
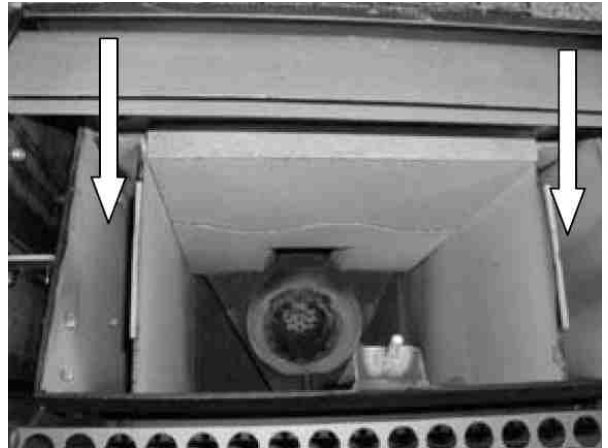
Note: Make sure you remount fixing clamp correctly when reassembling!



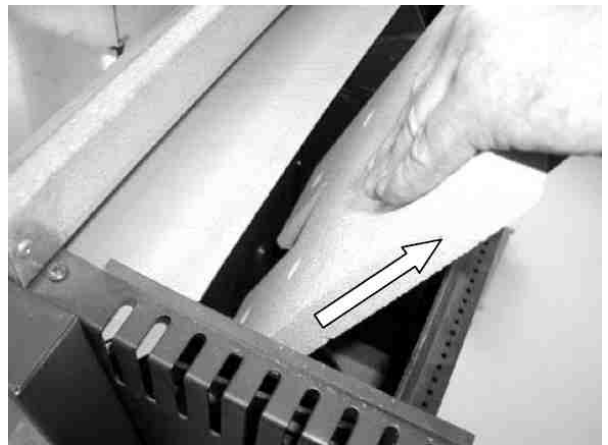
3. Lift upper deflection plate and remove.



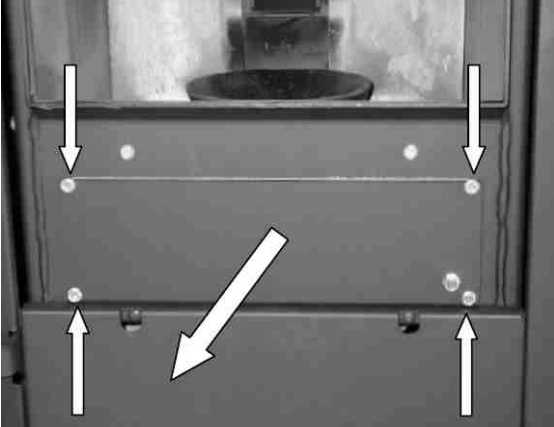
4. Clean l + r flueways with cleaning brush.



5. Remove chamotte and clean rear stove wall.

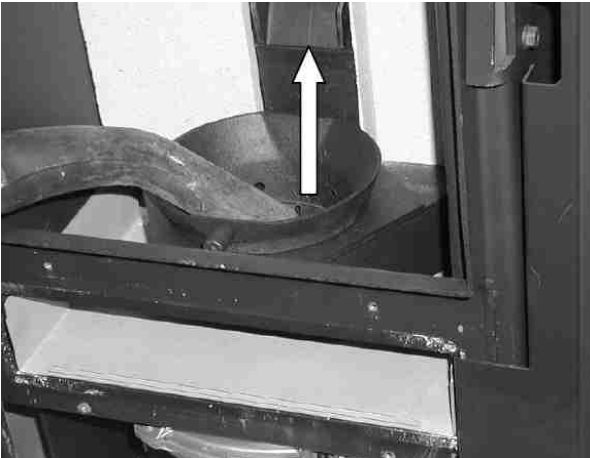


6. Release the four screws of front inspection lid and remove inspection lid.
(Make sure sealing is correctly seated when reassembling).

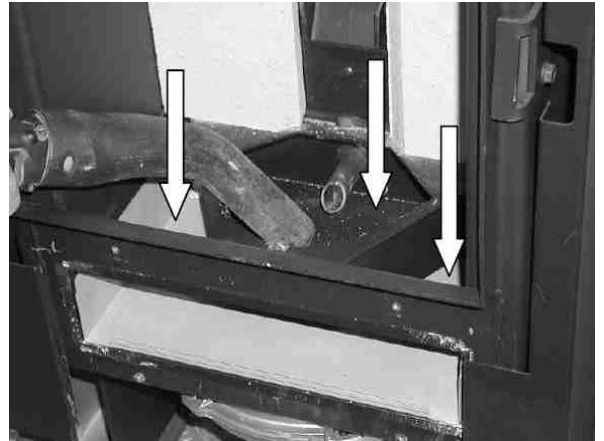


⚠ Mind hot ash and hidden glowing embers!

7. Vacuum burner pot. Lift burner pot out and clean. Clean combustion air holes with a suitable implement (screwdriver) if necessary.

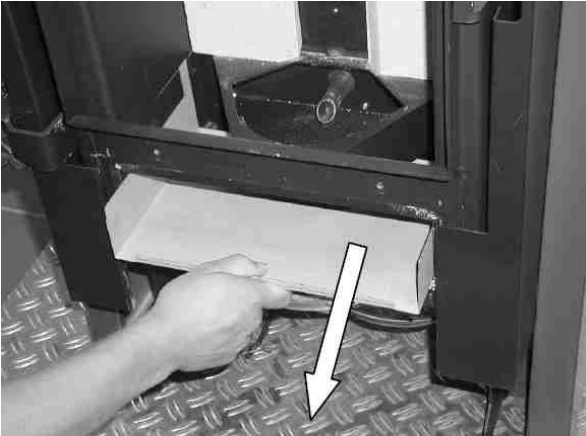


8. Vacuum pot holder and base plate thoroughly.

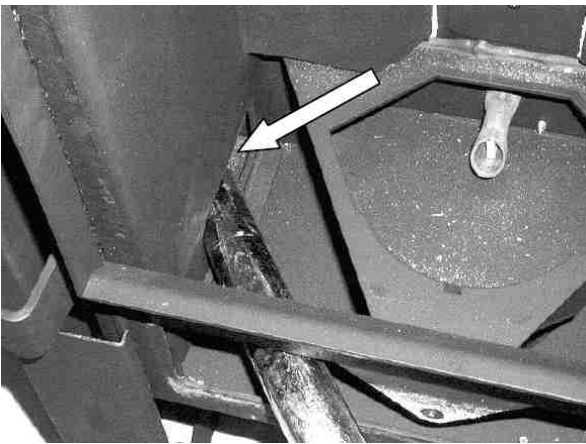


Important notes: When inserting the burner pot again make sure it rests fully on the pot holder. Remove any combustion residues on the pot or pot holder. Check that the burner pot is firmly seated in the pot holder and doesn't side-wobble by more than 1 to 2 mm – if it does, you will need to replace the burner pot (wearing part). The “burner nose” must point forward.

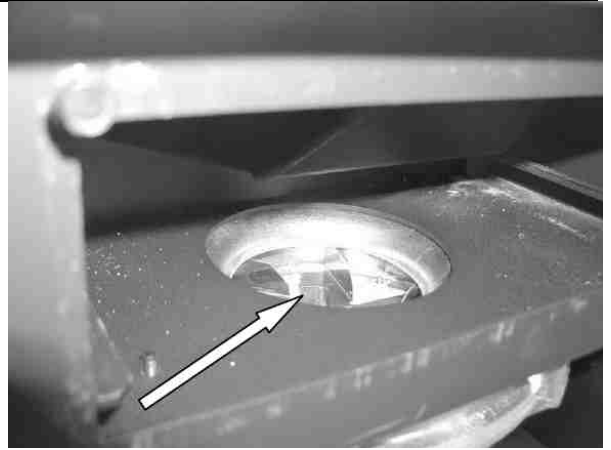
9. Pull base plate out towards you and clean.



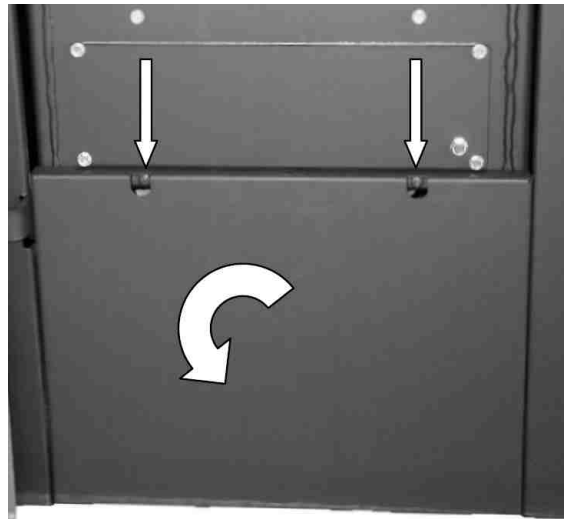
10. Vacuum flueways thoroughly.



11. Inspect flue gas fan for soiling.



12. **Only if flue gas fan requires cleaning:** Release both screws of cover and remove cover.

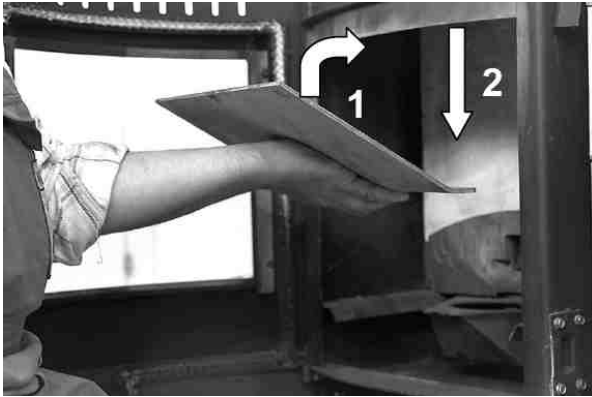


Clean fan (see Chapter 9.10).

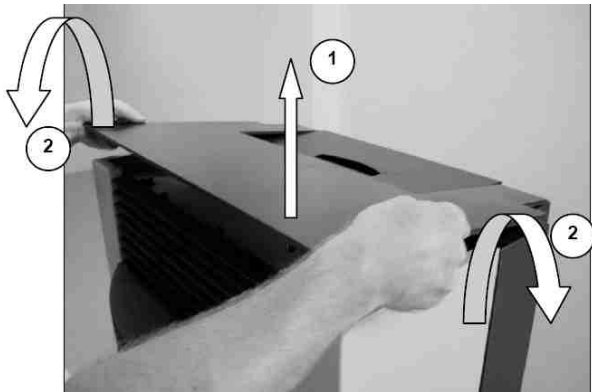
See Chapter 9.10 for further service procedure.

9.5 Cleaning the flueways on Airplus appliance "Topline"

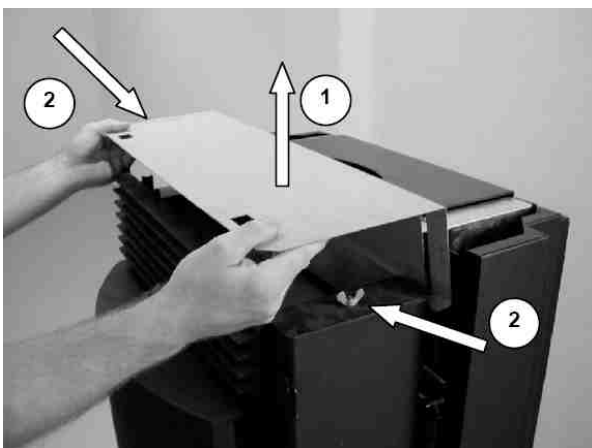
1. First set deflection plate in firedoor vertical, then pull it downward and remove.



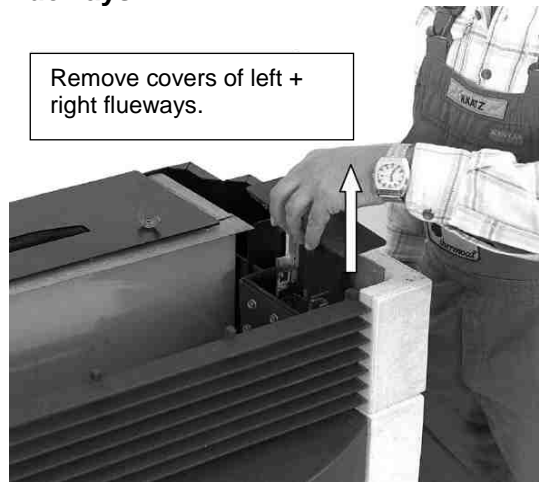
2. Remove the lid and the left and right front side panels.



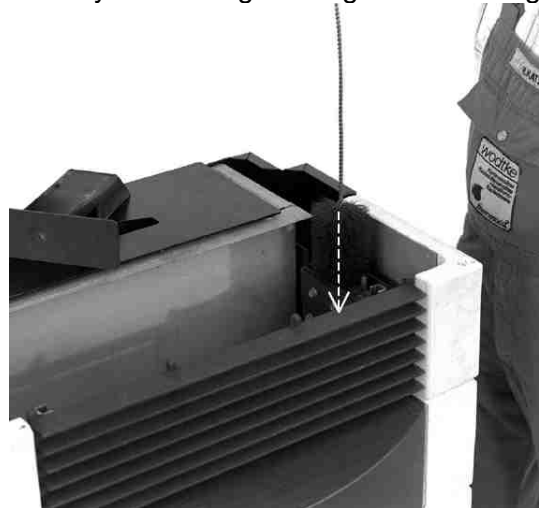
3. Remove upper heat reflector plate. Release wing nuts on **right and left flueways**.



4. Remove covers of **left and right side flueways**.



5. Then, using a cleaning brush, clean vertical flueway left and right along its entire length.



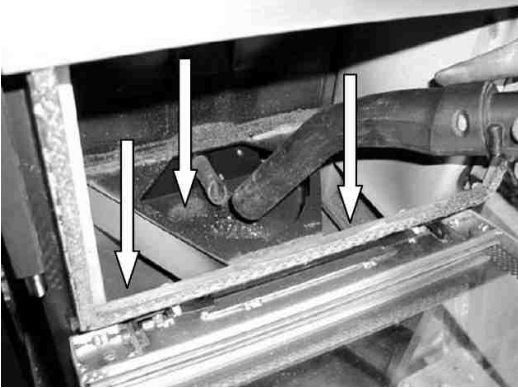
Make sure you also clean the horizontal connecting holes (1) on the left and right that lead from the firebox into the flueways.



6. Open the firedoor, take out the grate and vacuum burner pot. Lift burner pot out and clean. Clean combustion air holes with a suitable implement (screwdriver) if necessary. [An dieser Stelle ist im Deutschen ein Fehler – Anm. d. Ü. XX]

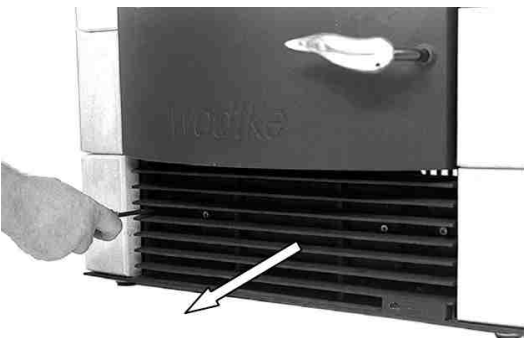


7. Vacuum firebox, pot holder and base plate thoroughly.

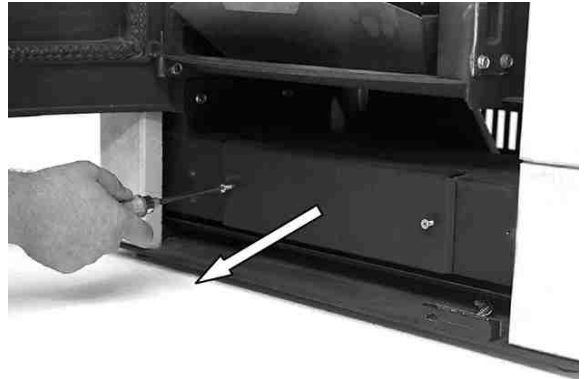


Important notes: When inserting the burner pot again make sure it rests fully on the pot holder. Remove any combustion residues on the pot or pot holder. Check that the burner pot is firmly seated in the pot holder and doesn't side-wobble by more than 1 to 2 mm – if it does, you will need to replace the burner pot (wearing part). The "burner nose" must point forward.

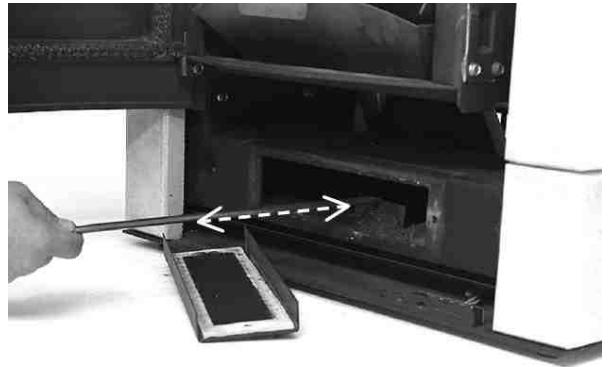
8. Release both screws on inlet grille and remove grille.



9. Release both screws on inspection cover and remove cover.



10. Remove ash using the ash scraper or a vacuum cleaner.



⚠ Mind hot ash and hidden glowing embers!

11. Inspect flue gas fan for soiling.

Note: In models of the Topline series the flue gas fan is screwed onto the stove in the rear left-hand area. You can check for soiling either by looking from behind into the flue outlet (pull the stove forward, away from the flue gas connector for this purpose) or by dismantling the fan motor (first remove side panel at the rear left for this purpose).

Only clean the fan **if necessary** (see Chapter 9.10).

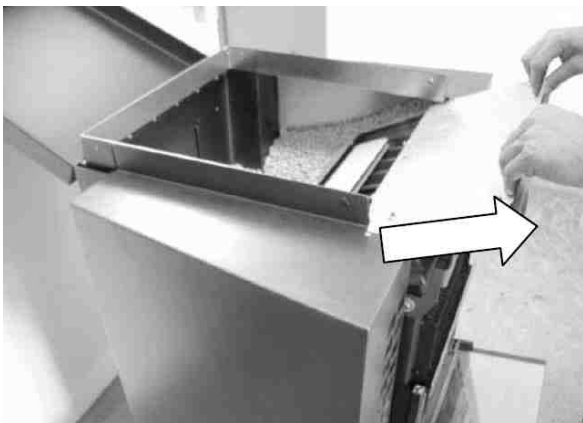
See Chapter 9.10 for further service procedure.

9.6 Cleaning the flueways on Waterplus appliance "CW 21"

1. **Carefully** remove front panel by pulling it upwards, taking care not to damage the glass. Open the fire door and fuel hopper lid.

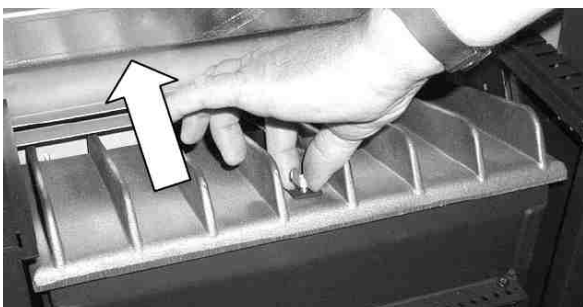


2. Release the middle screw and remove the slanted service cover by pulling it towards you.

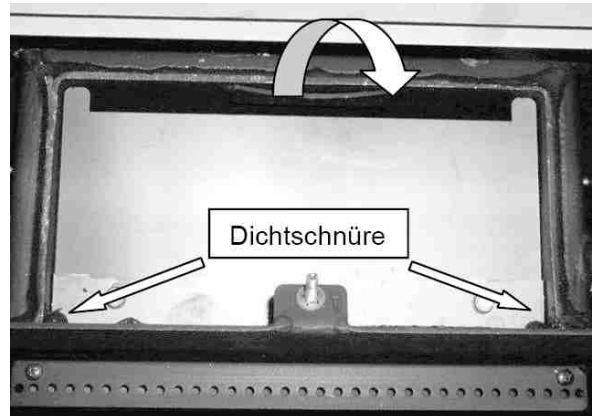


3. Release wing nut on cast metal lid and remove fixing clamp. Lift off cast metal lid and remove.

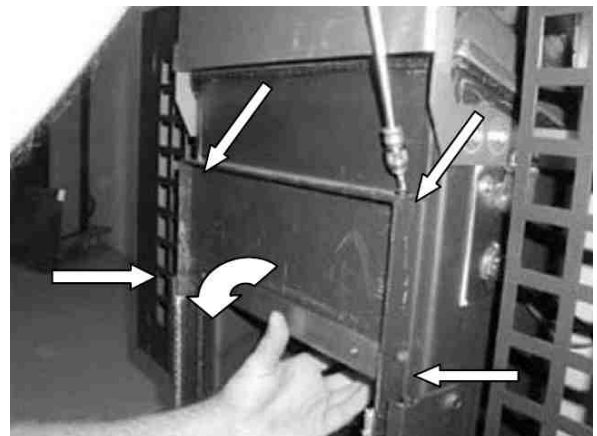
Note: Make sure you remount fixing clamp correctly when reassembling!



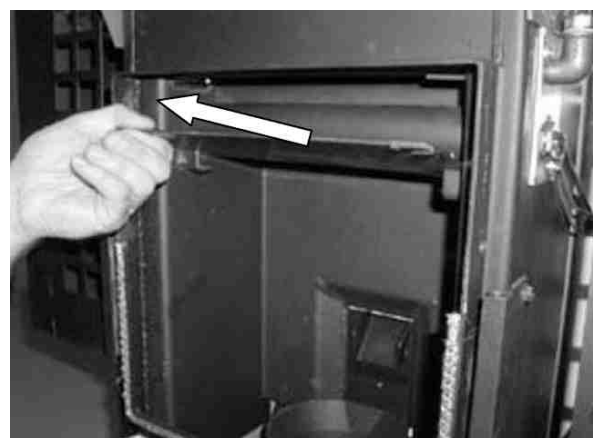
4. Lift upper deflection plate and remove.
Note: Make sure the sealing cords are seated firmly in their slits on the left and right when reassembling.



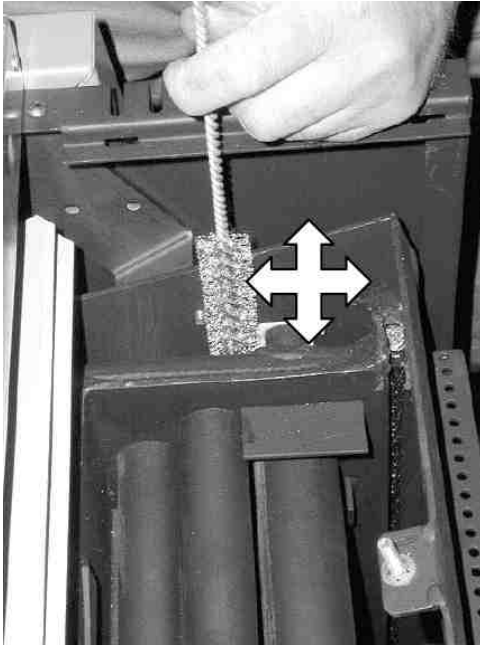
5. Release the four spoiler screws and remove spoiler.



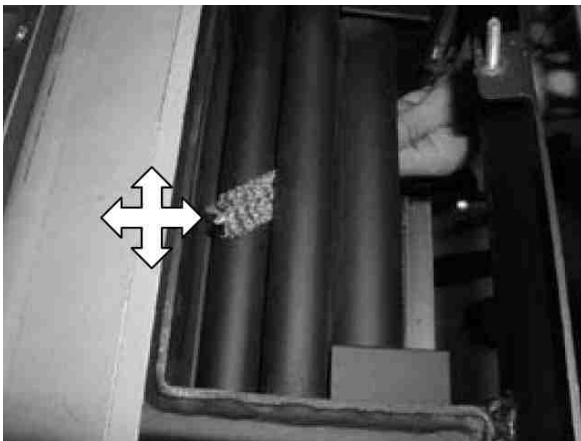
6. Remove lower deflection plate.



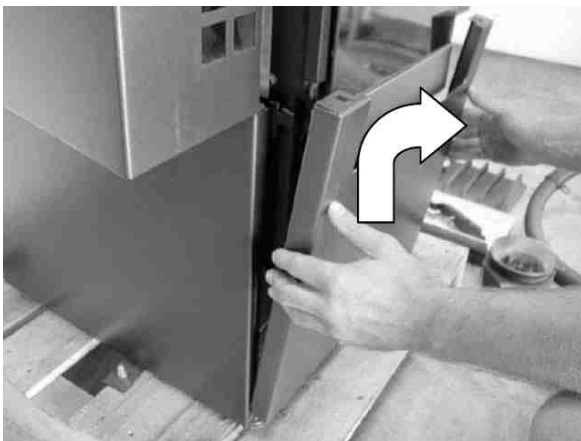
7. Clean flueways with soot brush.



8. Clean pipes of the water heat exchanger with a soot brush.

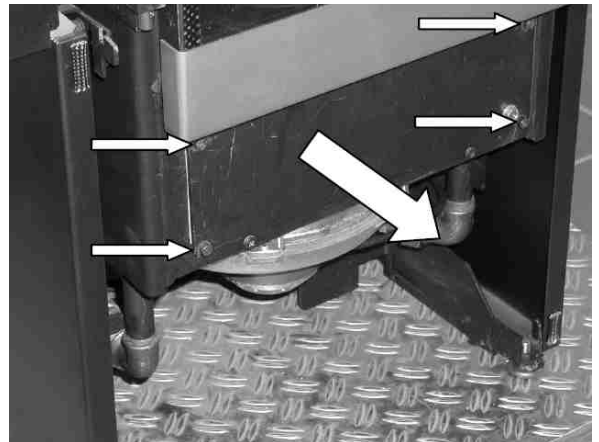


9. Remove lower front panel.

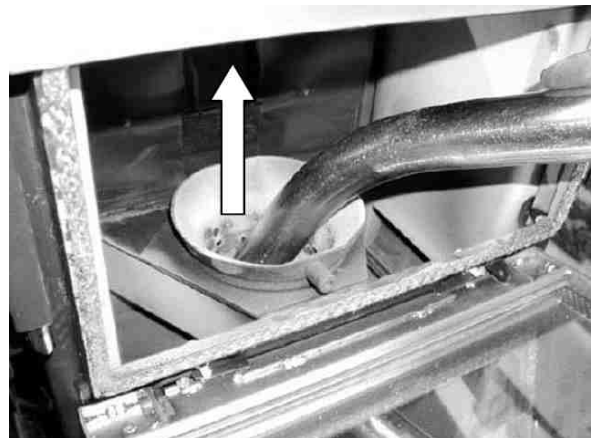


10. Release screws of front inspection lid and remove inspection lid. Make sure the sealing is correctly seated when reassembling.

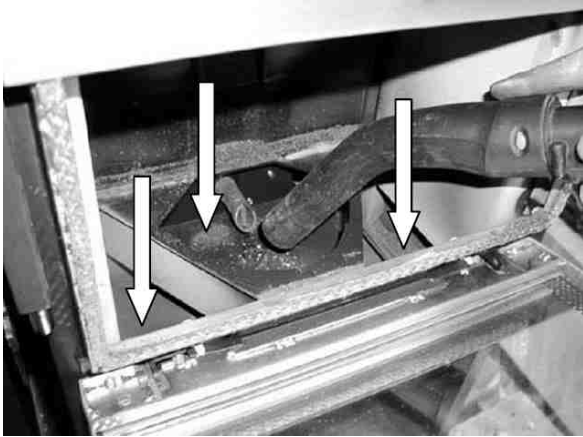
 **Mind hot ash and hidden glowing embers!**



11. Vacuum burner pot. Lift burner pot out and clean. Clean combustion air holes with a suitable implement (screwdriver) if necessary.

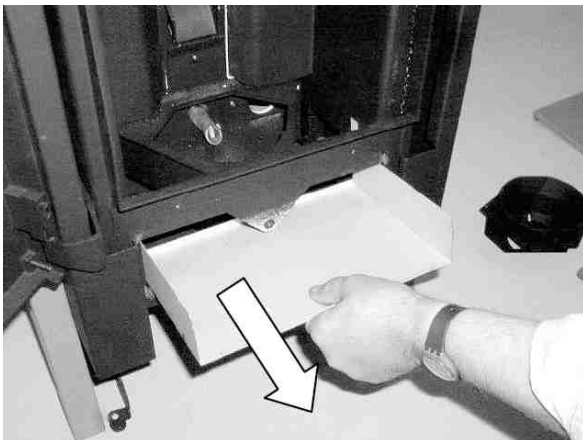


12. Vacuum pot holder and base plate thoroughly.

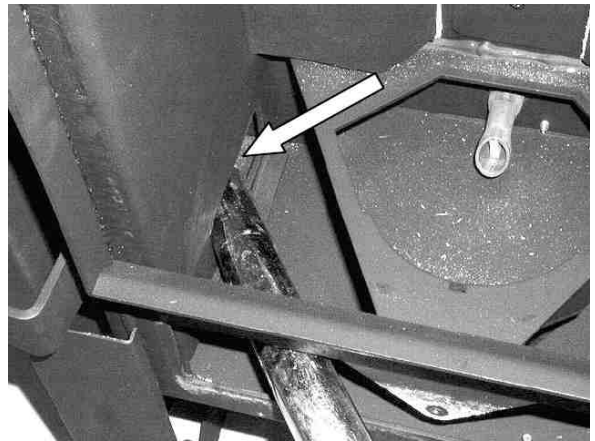


Important notes: When inserting the burner pot again make sure it rests fully on the pot holder. Remove any combustion residues on the pot or pot holder. Check that the burner pot is firmly seated in the pot holder and doesn't side-wobble by more than 1 to 2 mm – if it does, you will need to replace the burner pot (wearing part). The "burner nose" must point forward.

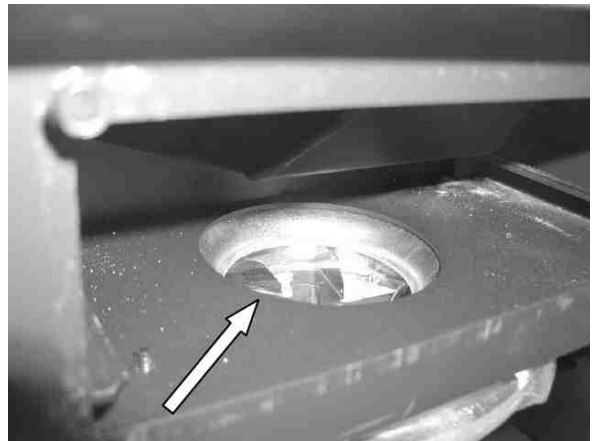
13. Pull base plate out towards you and clean.



14. Vacuum flueways thoroughly.



15. Inspect flue gas fan for soiling.

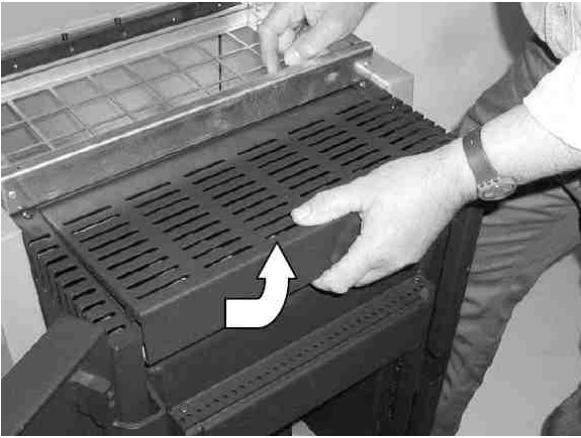


Only clean the fan **if necessary** (see Chapter 9.10).

See Chapter 9.10 for further service procedure.

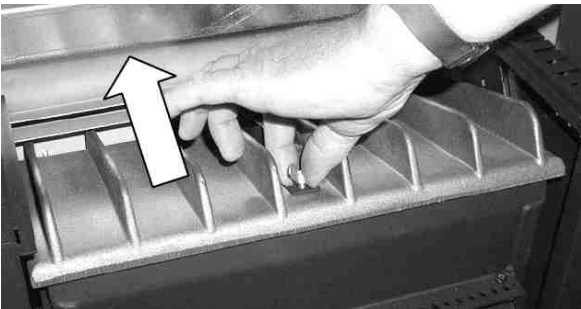
9.7 Cleaning the flueways on Waterplus appliance "Smart"

1. Open the firedoor. Lift upper panel and remove.



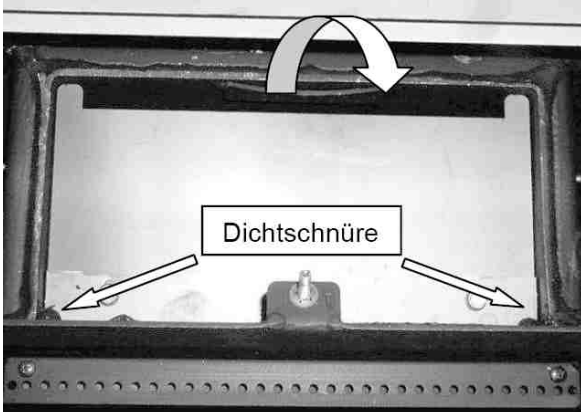
2. Release wing nut on cast metal lid and remove fixing clamp. Lift off cast metal lid and remove.

Note: Make sure you remount fixing clamp correctly when reassembling!

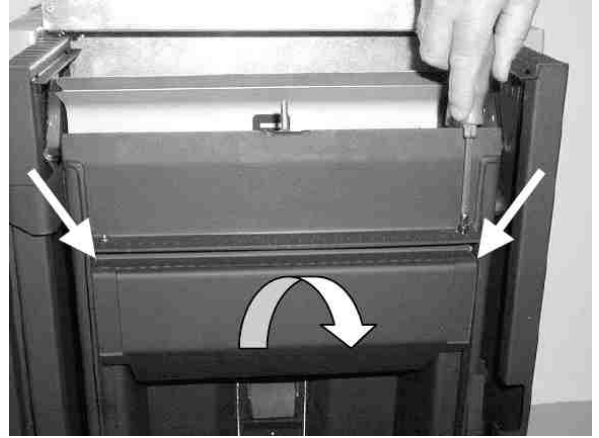


3. Lift upper deflection plate and remove.
Note: Make sure the sealing cords are seated firmly in their slits on the left and right when reassembling.

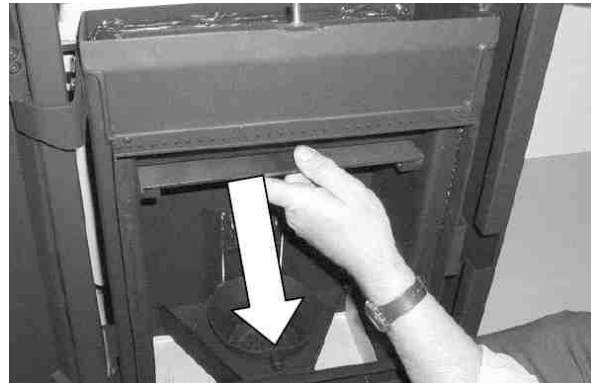
[Dichtschnüre → sealing cords xx]



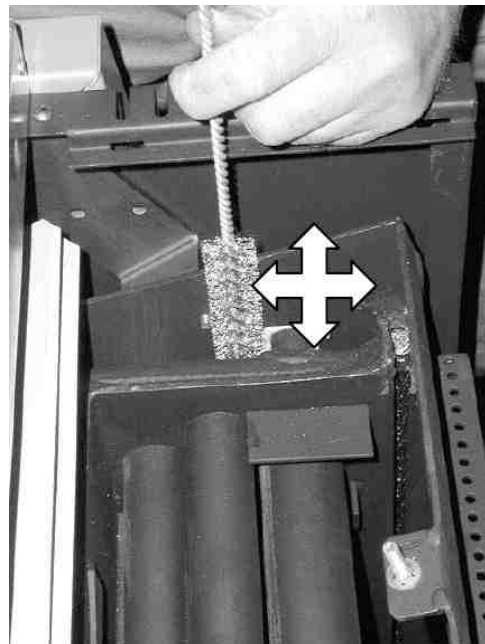
4. Release both screws of spoiler and remove spoiler.



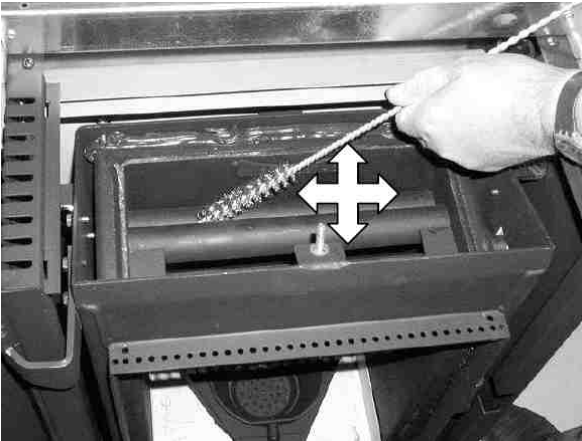
5. Lift lower deflection plate and remove.



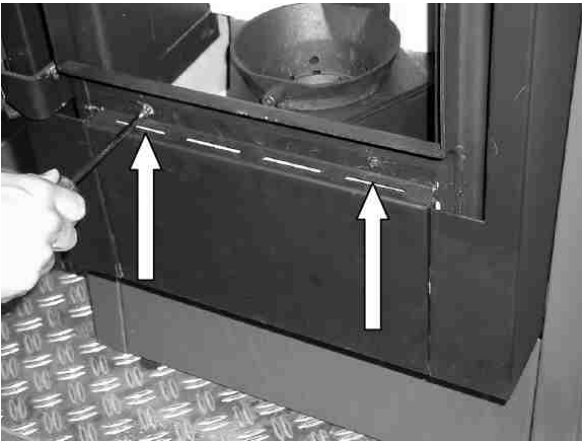
6. Clean flueways with soot brush.



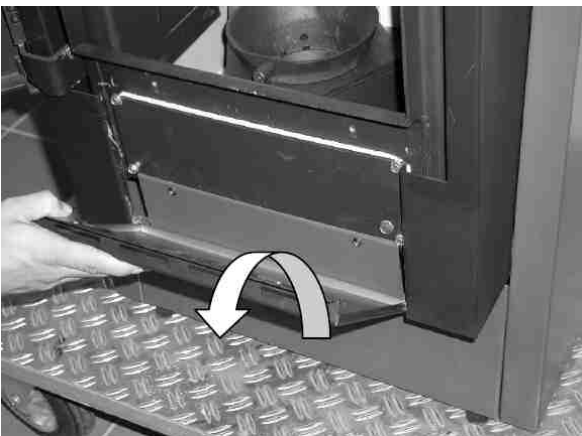
7. Clean pipes of the water heat exchanger with a soot brush.



8. Release both screws of inspection cover.

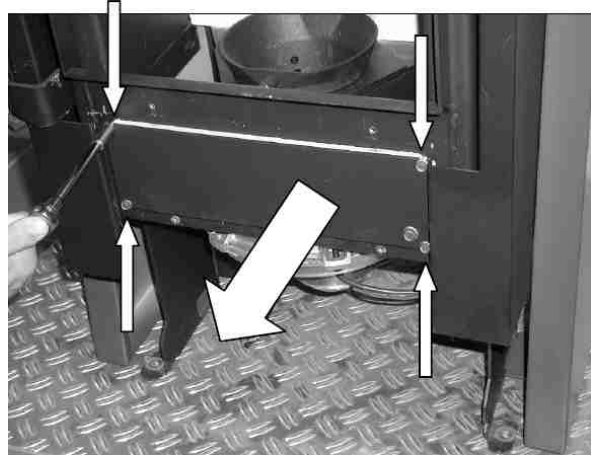


9. Remove inspection cover.

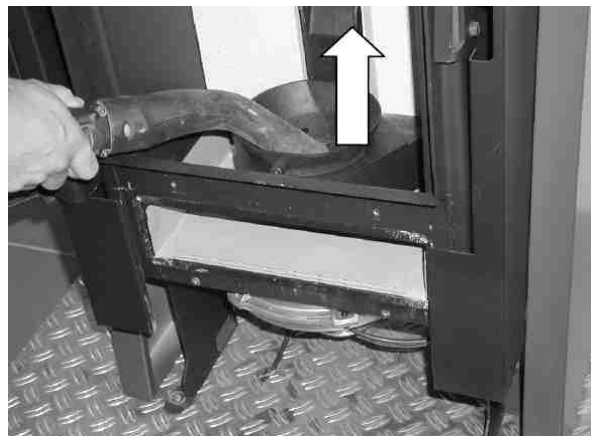


10. Release the four screws of front inspection lid and remove inspection lid. Make sure the sealing is correctly seated when reassembling.

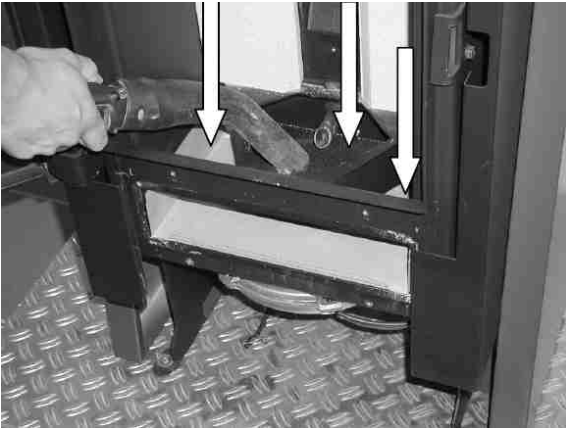
⚠ Mind hot ash and hidden glowing embers!



11. Vacuum burner pot. Lift burner pot out and clean. Clean combustion air holes with a suitable implement (screwdriver) if necessary.

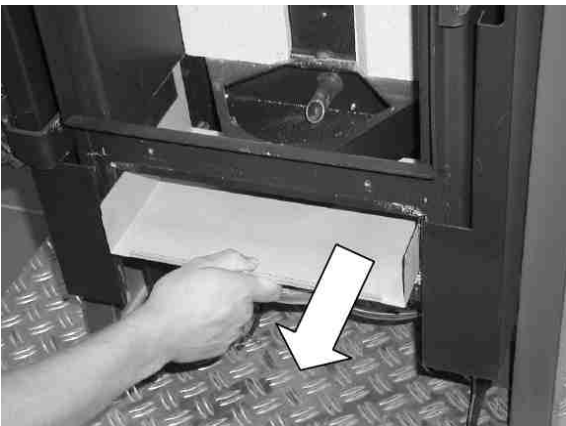


12. Vacuum pot holder and base plate thoroughly.



Important notes: When inserting the burner pot again make sure it rests fully on the pot holder. Remove any combustion residues on the pot or pot holder. Check that the burner pot is firmly seated in the pot holder and doesn't side-wobble by more than 1 to 2 mm – if it does, you will need to replace the burner pot (wearing part). The "burner nose" must point forward.

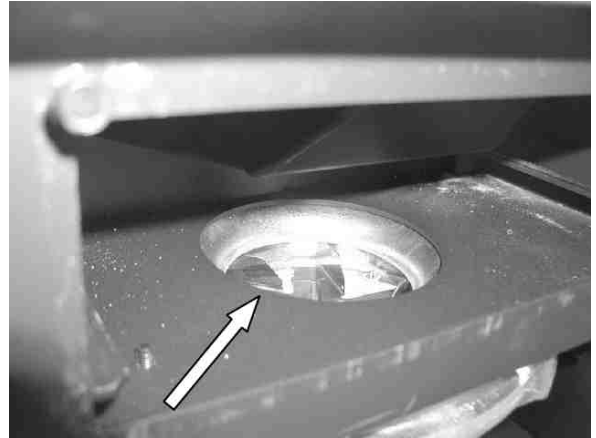
13. Pull base plate out towards you and clean.



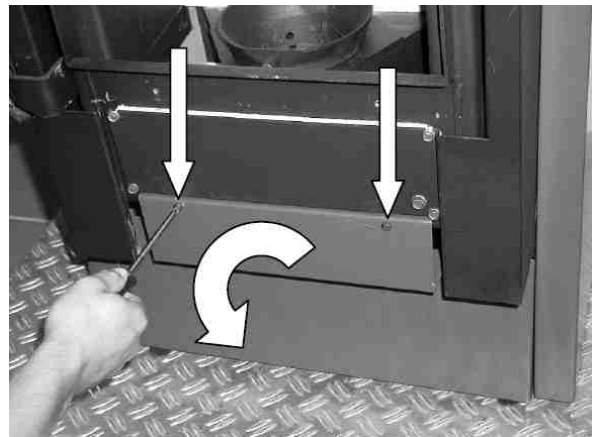
14. Vacuum flueways thoroughly.



15. Inspect flue gas fan for soiling.



16. Only if flue gas fan requires cleaning: Release both screws of cover and remove cover.

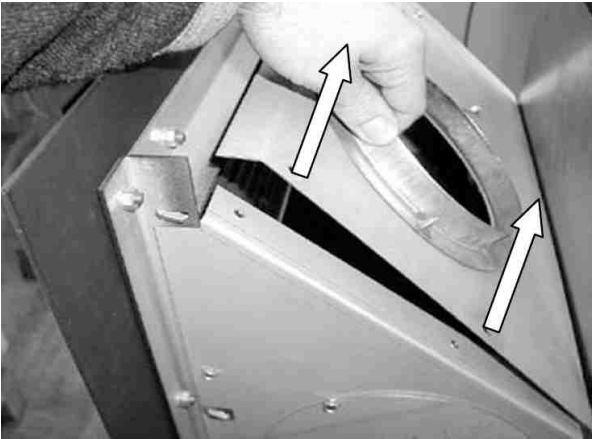


Only clean the fan **if necessary** (see Chapter 9.10).

See Chapter 9.10 for further service procedure.

9.8 Cleaning the flueways on Waterplus appliance "PE"

1. Pull out insert stove PE towards you, out of its casing. If necessary, first remove base plate from in front of stove and cover floor if sensitive (otherwise rollers might damage floor!). Open the firedoor.
2. Release the 4 screws on the upper cover and remove cover.



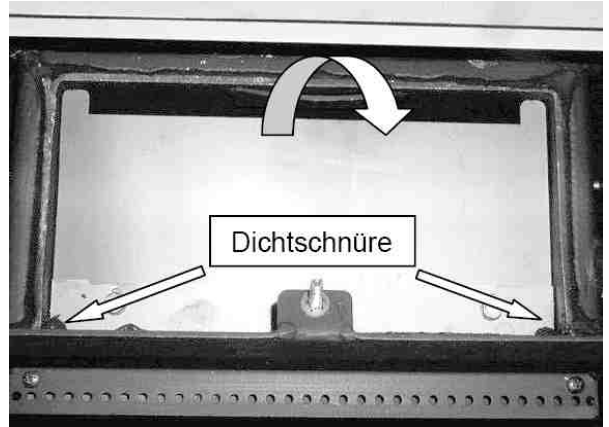
3. Release wing nut on cast metal lid and remove fixing clamp.

Note: Make sure you remount fixing clamp correctly when reassembling!

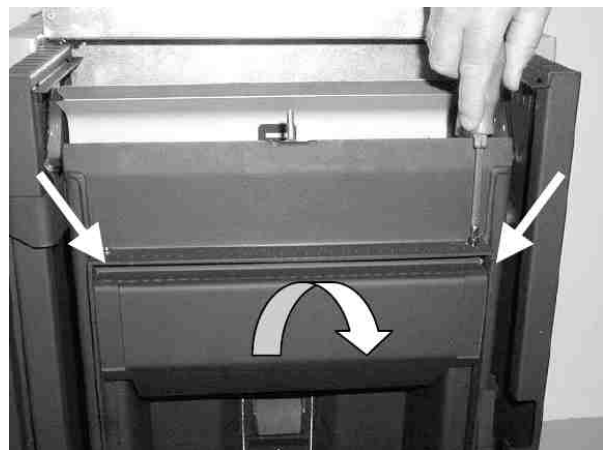


4. Lift off cast metal lid and remove.

Note: Make sure the sealing cords are seated firmly in their slits on the left and right when reassembling.



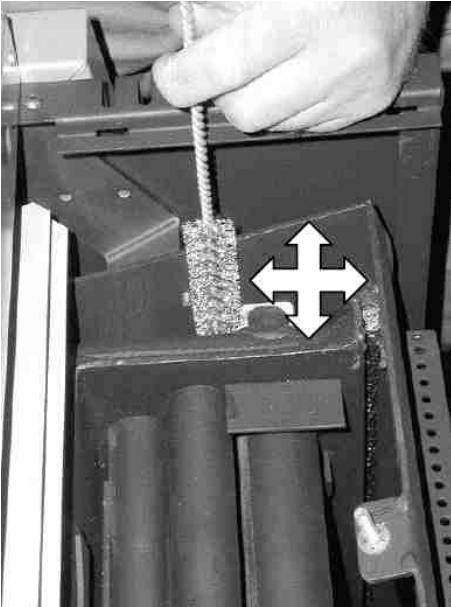
5. Release both screws of spoiler and remove spoiler.



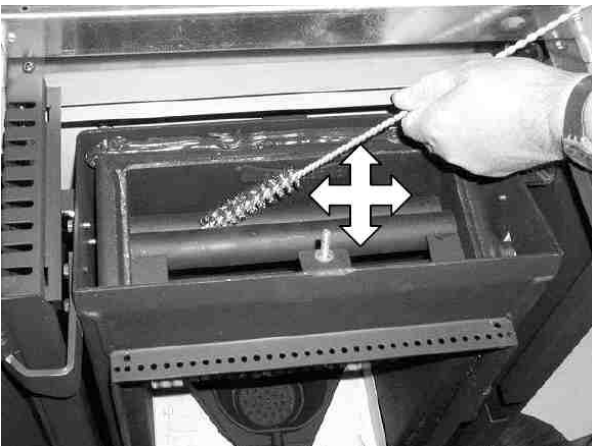
6. Remove lower deflection plate.



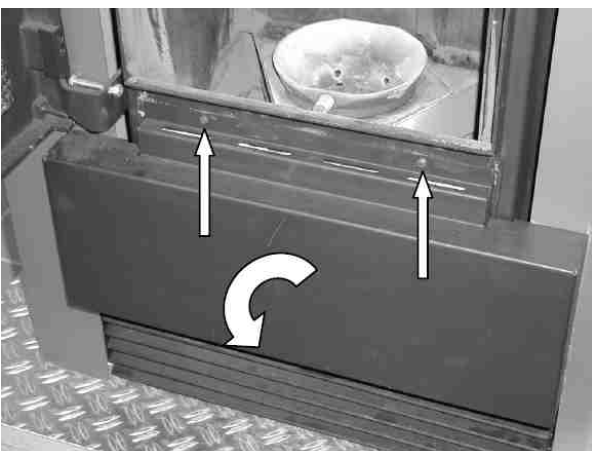
7. Clean l + r flueways with cleaning brush.



8. Clean pipes of the water heat exchanger with a soot brush.

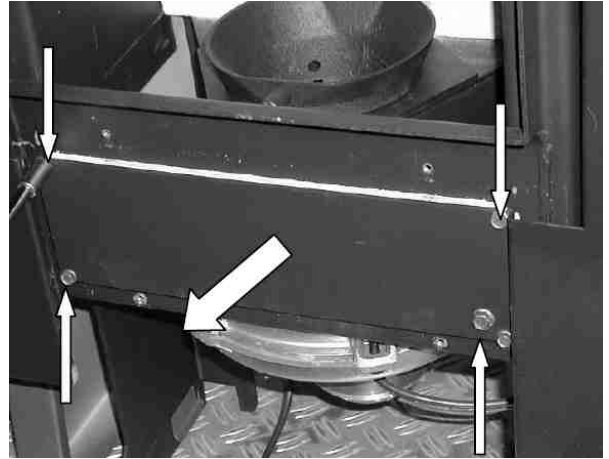


9. Release both screws of inspection cover.

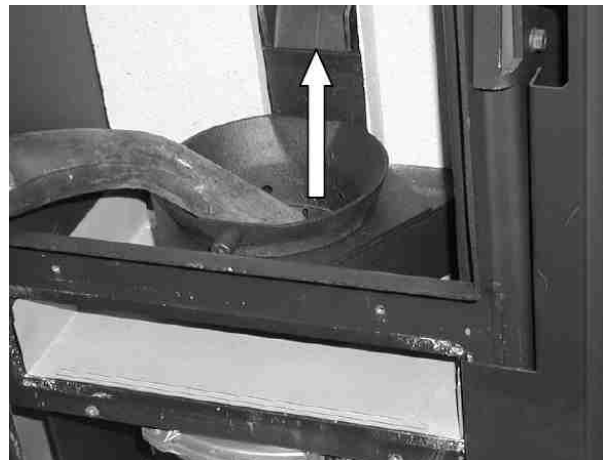


10. Release the four screws of front inspection lid and remove inspection lid. Make sure the sealing is correctly seated when reassembling.

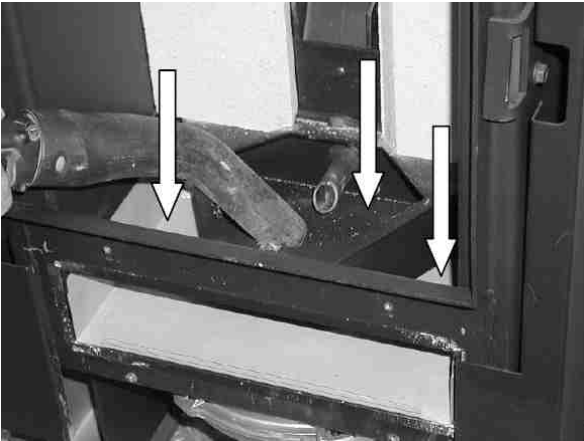
⚠ Mind hot ash and hidden glowing embers!



11. Vacuum burner pot. Lift burner pot out and clean. Clean combustion air holes with a suitable implement (screwdriver) if necessary.

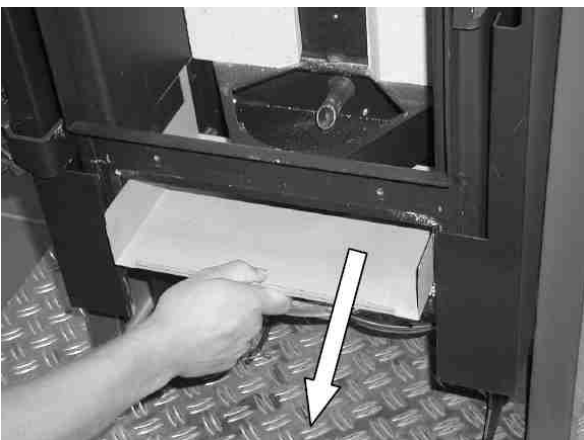


12. Vacuum pot holder and base plate thoroughly.

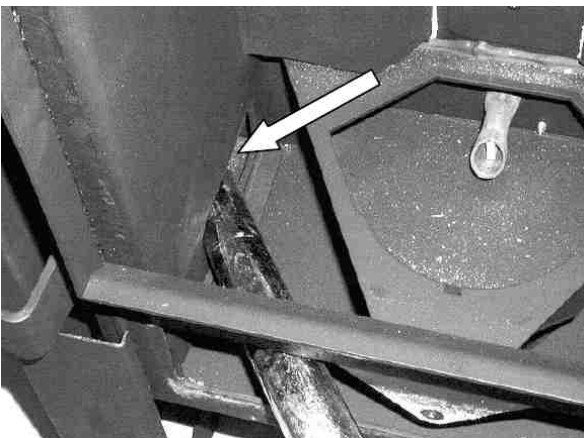


Important notes: When inserting the burner pot again make sure it rests fully on the pot holder. Remove any combustion residues on the pot or pot holder. Check that the burner pot is firmly seated in the pot holder and doesn't side-wobble by more than 1 to 2 mm – if it does, you will need to replace the burner pot (wearing part). The "burner nose" must point forward.

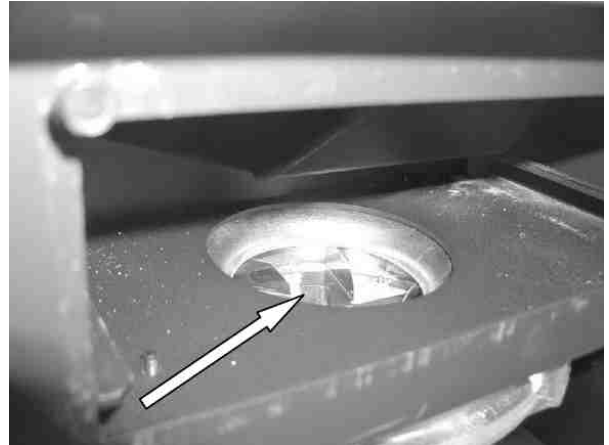
13. Pull base plate out towards you and clean.



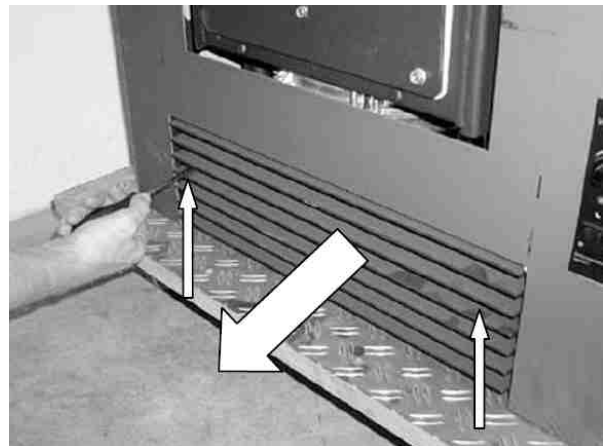
14. Vacuum flueways thoroughly.



15. Inspect flue gas fan for soiling.



16. Only if flue gas fan requires cleaning: Release both screws of cover and remove cover.

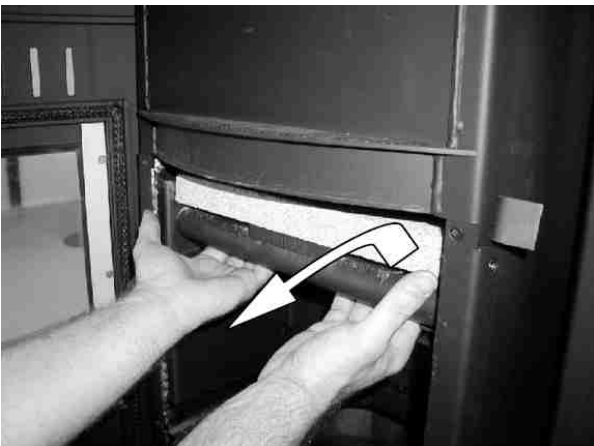


Clean fan (see Chapter 9.10).

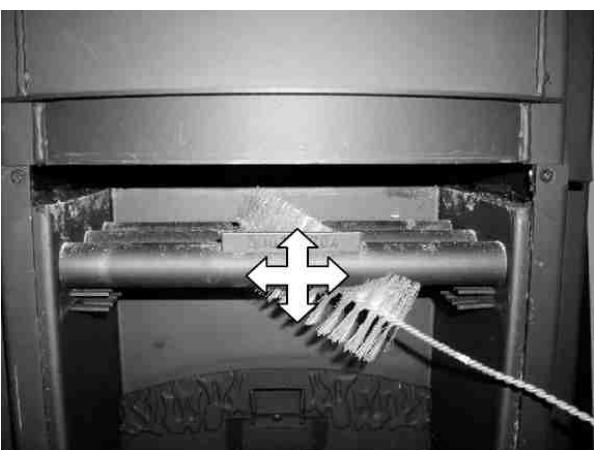
See Chapter 9.10 for further service procedure.

9.9 Cleaning the flueways on Waterplus appliance "Topline"

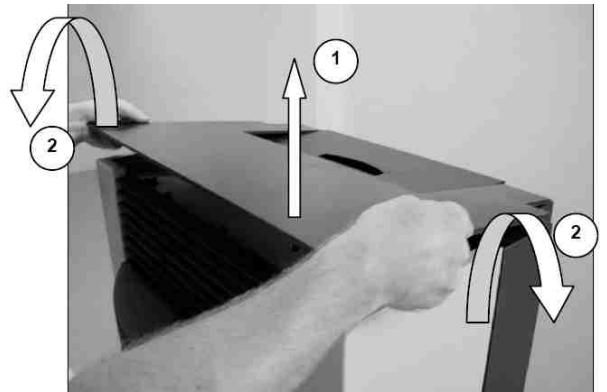
1. First take the spoiler and deflection plate out of the firebox.



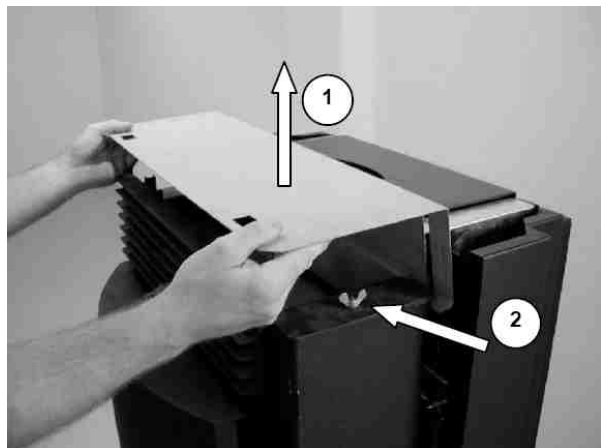
2. Then, using a cleaning brush, clean pipes and all 3 side walls of the water heat exchanger.



3. Remove the lid and the left and right front side panels.



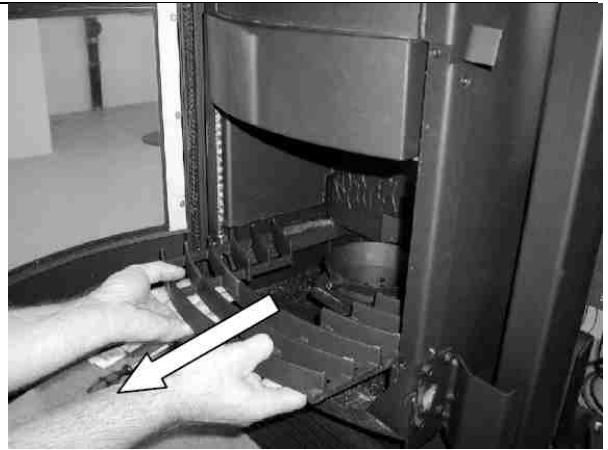
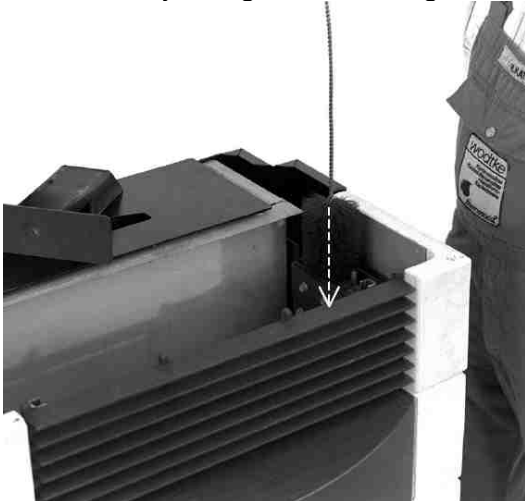
4. Remove upper heat reflector plate. Release wing nuts on right flueway.



5. Remove covers of right flueway.

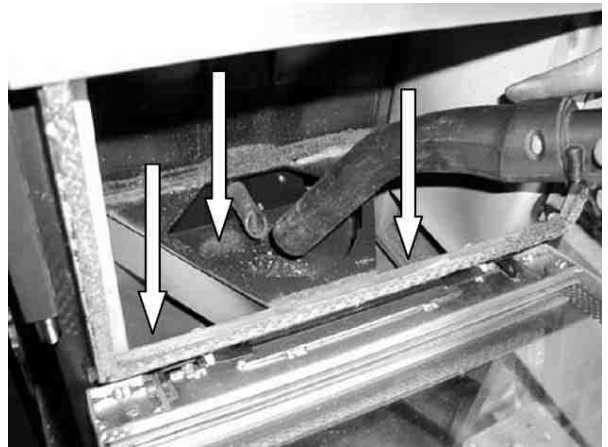


6. Using a cleaning brush, clean vertical right-hand flueway along its entire length.



8. Vacuum firebox, pot holder and base plate thoroughly.

Be sure also to clean the **horizontal connecting hole (1)** on the right leading through to the firebox.



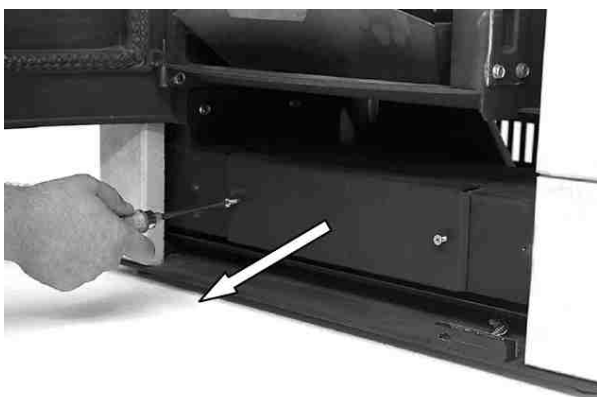
Important notes: When inserting the burner pot again make sure it rests fully on the pot holder. Remove any combustion residues on the pot or pot holder. Check that the burner pot is firmly seated in the pot holder and doesn't side-wobble by more than 1 to 2 mm – if it does, you will need to replace the burner pot (wearing part). The "burner nose" must point forward.

7. Open the fire door, take out the grate and vacuum burner pot. Lift burner pot out and clean. Clean combustion air holes with a suitable implement (screwdriver) if necessary. [An dieser Stelle ist im Deutschen ein Fehler – Anm. d. Ü. XX]

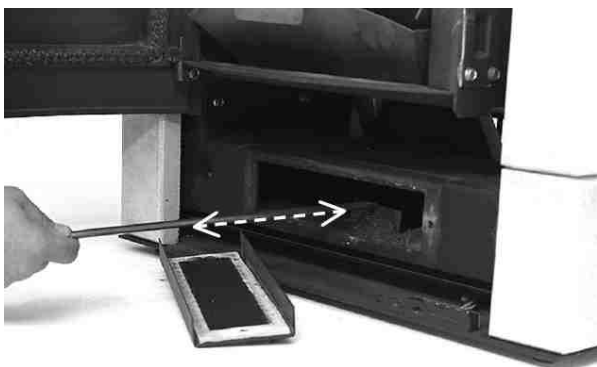
9. Release both screws on inlet grille and remove grille.



10. Release both screws on inspection cover and remove cover.



11. Remove ash using the ash scraper or a vacuum cleaner.



 **Mind hot ash and hidden glowing embers!**

12. Inspect flue gas fan for soiling.

Note: In models of the Toplevel series the flue gas fan is screwed onto the stove in the rear left-hand area. You can check for soiling either by looking from behind into the flue outlet (pull the stove forward, away from the flue gas connector for this purpose) or by dismantling the fan motor (first remove side panel at the rear left for this purpose).

Only clean the fan **if necessary** (see Chapter 9.10).

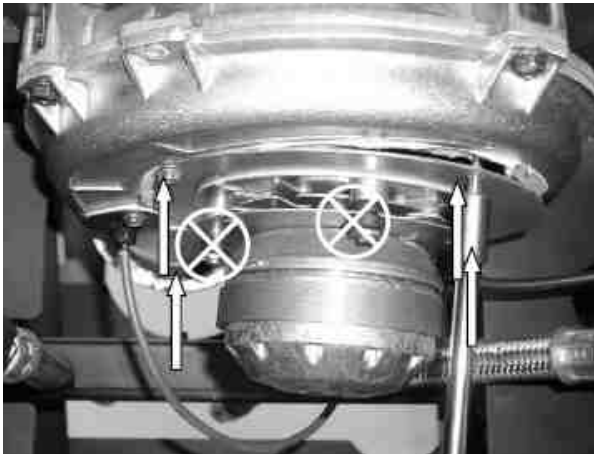
See Chapter 9.10 for further service procedure.

9.10 Cleaning the flue gas fan and flue gas connector (all models)

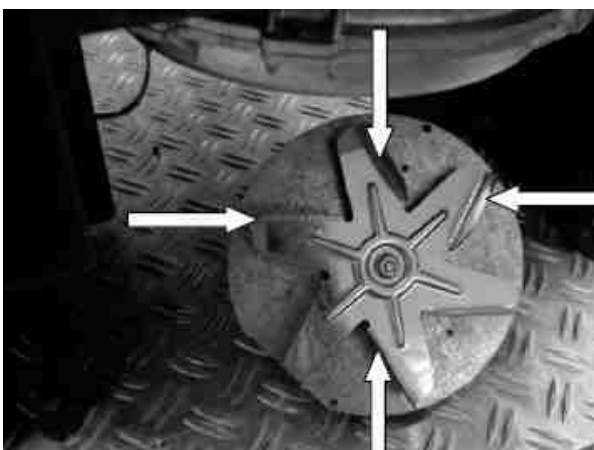
If the fan wheels or fan housing become soiled with strongly adhering **soot or tar**, it is essential to clean them, since otherwise **the unbalance of rotating mass can damage the bearings** or the fan wheel might graze the housing or become blocked. Do the following:

1. Release the 4 **outer screws** of the fan motor. Do not release the inner screws (with rubber shock pads).

Important notes: If possible only clean the fan when dismantled in order to avoid damage.



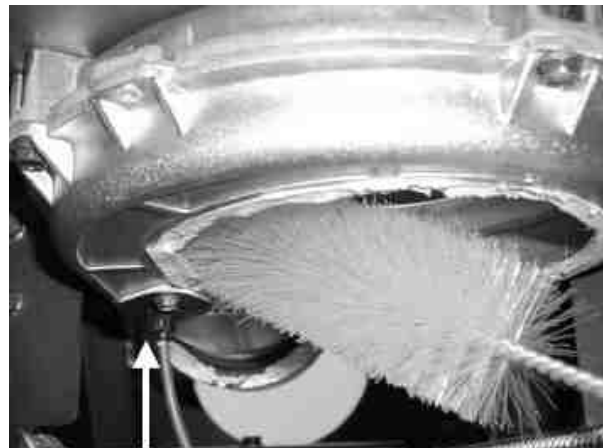
2. Clean all fan wheels with a cloth or brush.
Caution: Do not bend the fan wheels. Danger of rotary imbalance!



3. Using a cleaning brush clean the sleeve of the flue gas sensor inside the flue gas fan (see picture), removing any soot that may be clinging to it (which would have an undesirable insulating effect).

Alternatively you can also dismantle the whole sleeve from the flue gas fan and then clean it (it is not necessary to dismantle the flue gas sensor TR from the sleeve for this purpose). Another alternative is to remove the flue gas connector and then clean the sleeve by reaching in from the outlet side of the flue gas fan. Brush carefully in order not to damage the sensor sleeve or the fan.

The following picture shows the position of the sleeve of the flue gas sensor TR and how to clean it.



After completing all cleaning routines reassemble components in the reverse order of disassembly.

Caution / Important note:

Be sure also to remove the **flue gas connector** and clean it with the cleaning brush. All servicing is pointless if the flue connector is clogged with ash or soot, since then the flue gas will not be drawn off however clean the stove itself.

9.11 Inspecting the suction pipe and air flow sensor (all models)

Important note: If the stove is connected to an **external combustion air pipe**, you should first inspect this pipe along its entire length for any blockage before inspecting the suction pipe and air flow sensor. This is to establish whether the suction pipe and air flow sensor are at all times supplied with a sufficient flow of combustion air. The combustion air pipe must be completely cleared of any foreign matter or deposits (such as lumps of dust). Combustion air pipes should always be arranged such that their opening outside the building is protected against wind pressure.

Having checked the combustion air pipe inspect the suction pipe and air flow sensor that are located directly next to the appliance. Use a mirror and torch to look inside the suction pipe. There are 2 things to look out for.

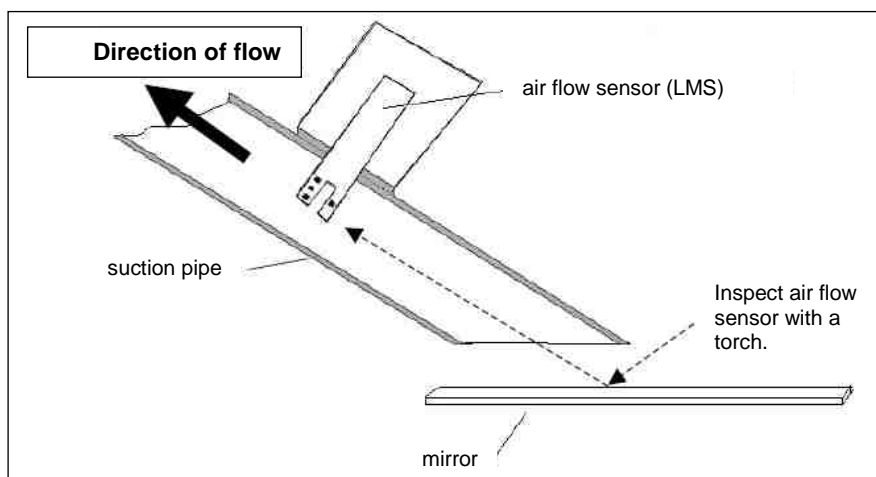
1) Check air flow sensor (LMS) for dust / fluff

The sensor and suction pipe must be free of dust and fluff. If this is the case, you need to clean neither the air flow sensor nor the suction pipe. **Only dismantle the air flow sensor** and clean it together with the suction pipe if you find dust deposits or bunches of hair or the like (see next chapter for dismantling instructions).

2) 2) Check air flow sensor (LMS) for soot or blackening

If the sensor shows no signs of soot, it should be in order. There is **no need to clean** the air flow sensor and the suction pipe. **Only if** the sensor shows soot or even signs of blackening should it be dismantled and cleaned gently using a paint brush and soft cloth. These are signs of **external trouble and/or insufficient cleaning** with resultant **flow reversal in the suction pipe**. It is essential to **find and rectify the cause of the external disorder (see also Chapter 0)**. It is also advisable to carry out a brief **functional check*** to determine whether the air flow sensor is still working properly.

*Brief functional check of the air flow sensor: Open door while stove is in operation. The stove should shut down within approx. 20 s, with the display showing "LO L-", and then start up again when the door is closed. Alternatively, you can have a service technician do a complete functional check, i.e. check the resistors of the air flow sensor and replace the sensor if necessary.



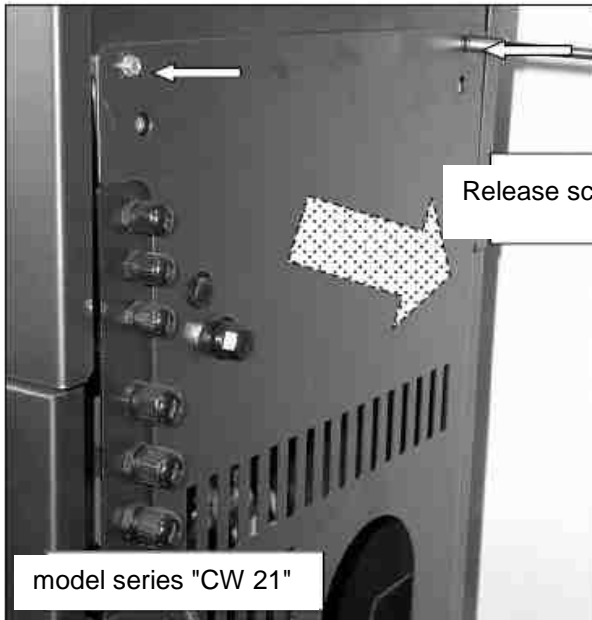
Note:

Never clean the air flow sensor when mounted and don't clean it with a brush or the like. This could destroy the sensor electronics. Observe the instructions in the following chapter.

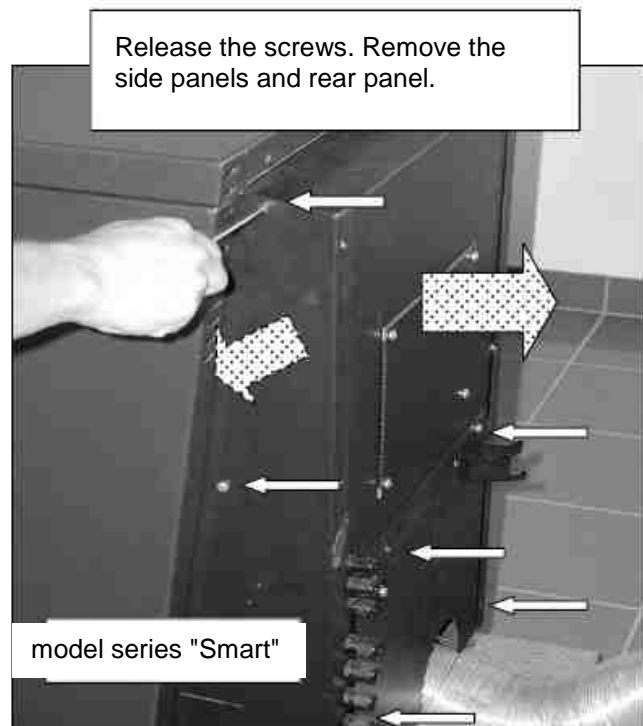
9.11.1 Dismounting and cleaning the air flow sensor and suction pipe

The air flow sensor normally does not need to be dismantled for servicing. Only clean it when necessary (for a diagnosis see above: soiled pipe or sensor). The air flow sensor is located in the combustion air suction pipe.

To dismount the sensor you need to remove various panels, depending on the model (see the following pictures). Release the screws and remove the side panels and rear panel (after disconnecting the mains socket!).



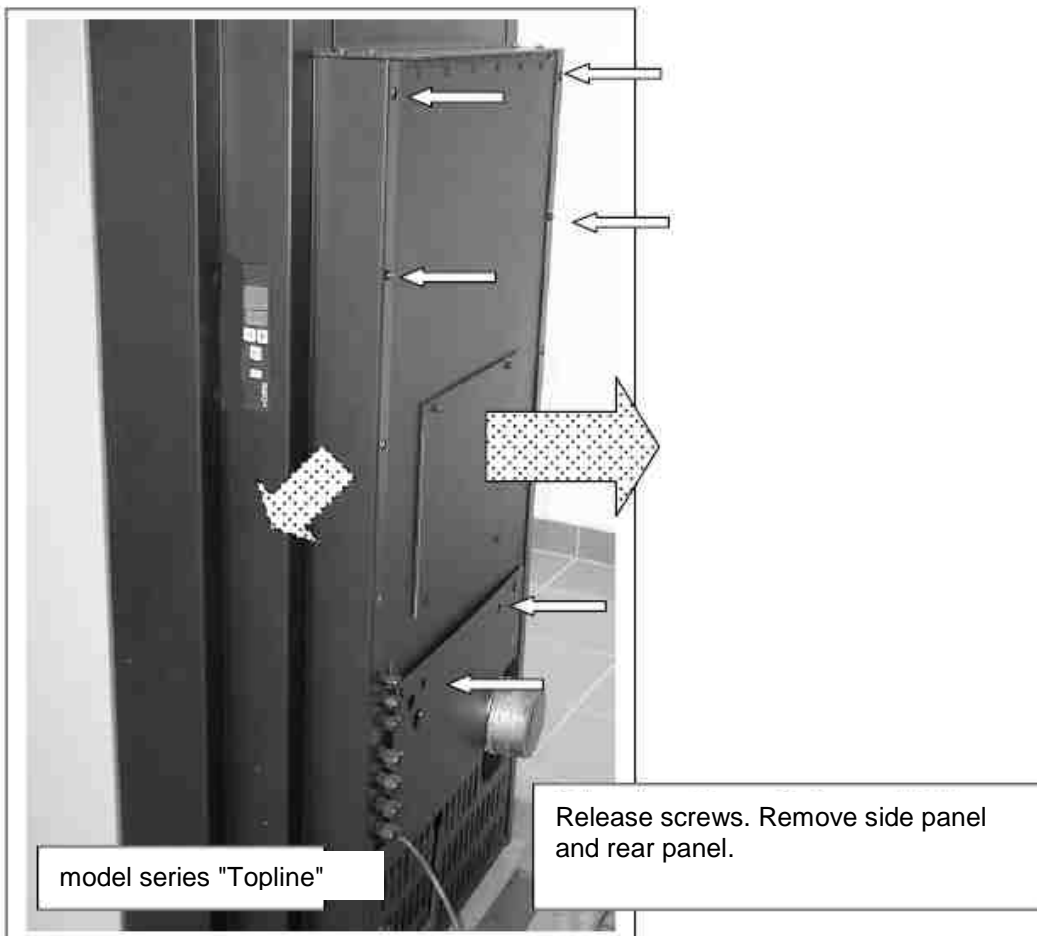
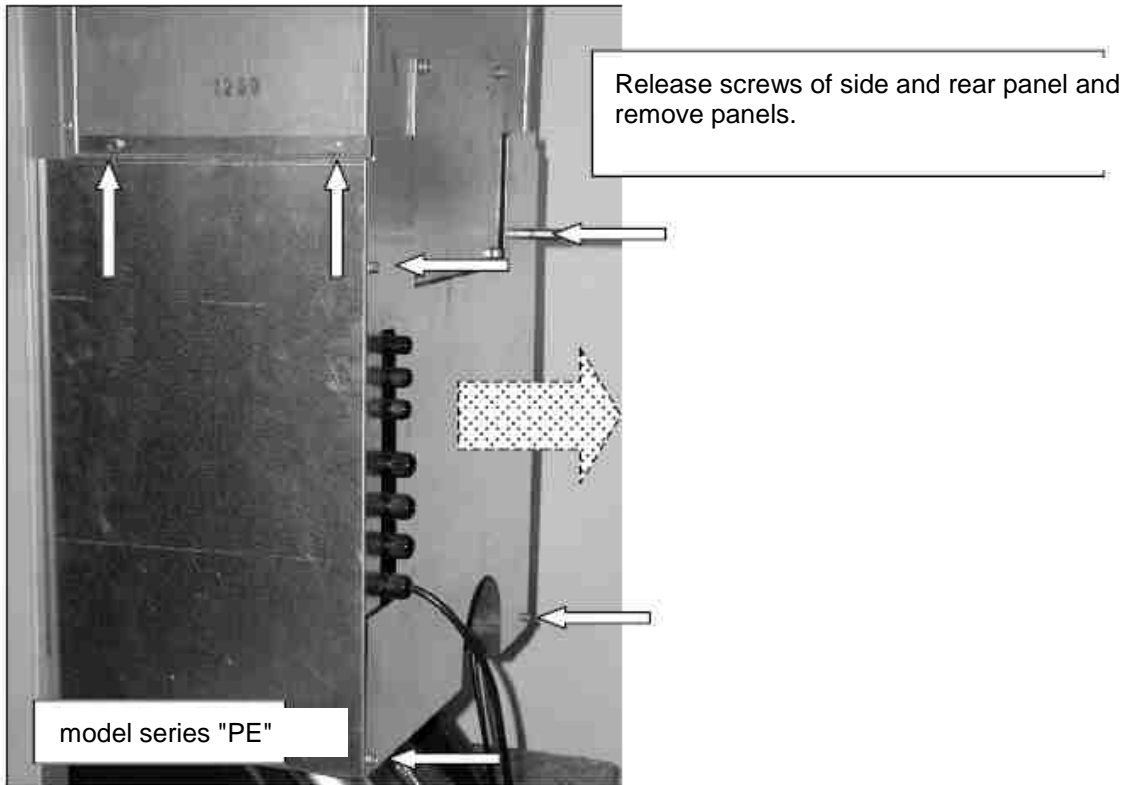
Release screws and remove rear panel.

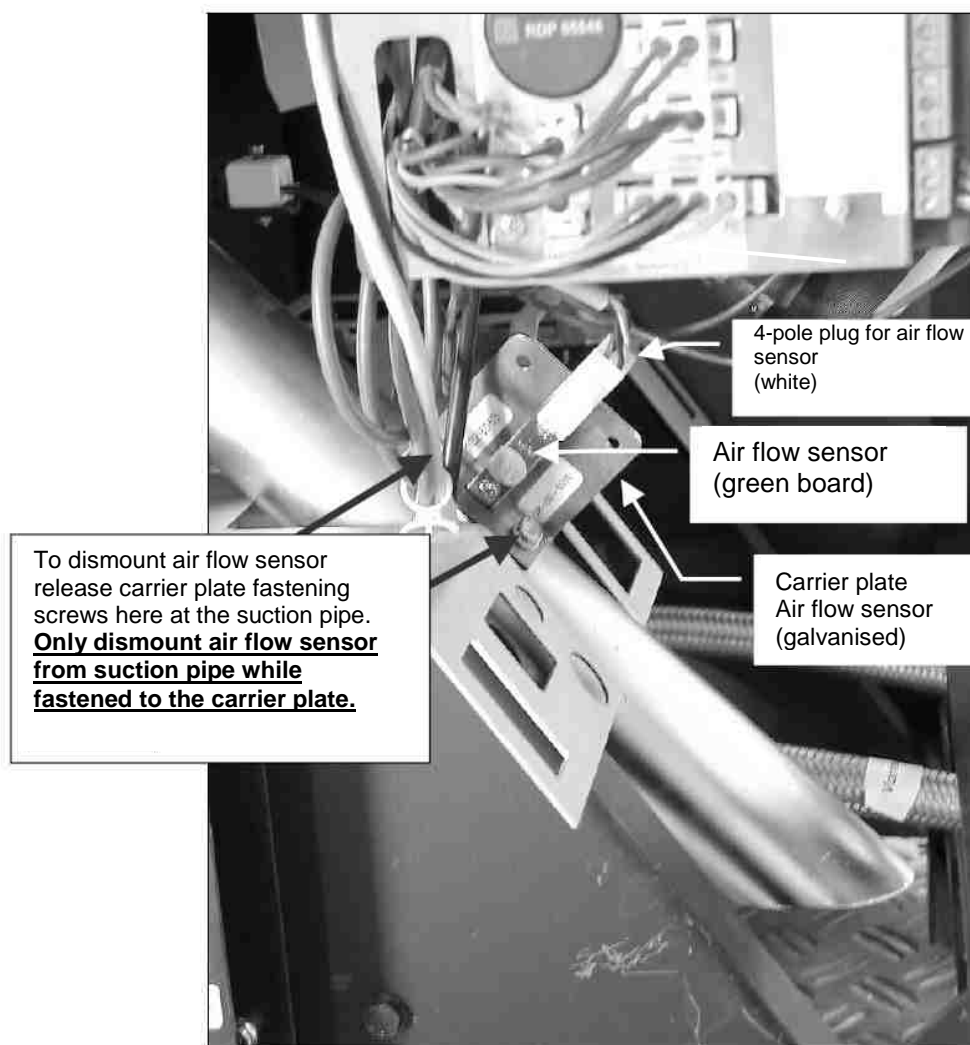


Release the screws. Remove the side panels and rear panel.



Release screws a little. Push rear panel upward and remove.





Disconnect cable of air flow sensor from air flow sensor. Release both screws of the carrier plate at the suction pipe and carefully remove the air flow sensor **together with the carrier plate** by pulling upward, taking care not to damage the tip. Carefully remove any dust or dirt deposit by blowing or using a paint brush.

Note:

Do not release the small screws that fasten the air flow sensor (circuit board) to the carrier plate.

Reassembly is done in the reverse order of assembly.

Important notes:

- Remount the air flow sensor as shown in the picture.
- The carrier plate must be located on the **right** as when looking in flow direction, since otherwise measuring errors will occur.
- A foul or blackened air flow sensor is an indication of some disorder in the building installations (for ex. negative pressure) or insufficient cleaning or servicing, but nonetheless requires replacement. Correct the disorder in the building installations prior to replacement.

9.12 Inspecting and cleaning electrical components (all models)

First ensure that the mains plug has been disconnected. Inspect the run of electrical cables. **Especially make sure that cables do not pass over sharp edges or hot places and that they show no tears or bare wire.** Torn or otherwise damaged cables must be replaced. Clean any electrical components that are covered with dust using a paint brush. Use a suitable scraping tool to remove any corrosion on electrical contacts.

9.13 Inspecting and cleaning convection air ducts (all models)

It is advisable to inspect all convection air passages (including those beneath the side panels and between the heat reflector plates) once a year and use a vacuum cleaner or paint brush to clean wherever large amounts of dust have accumulated.

9.14 Inspecting and cleaning the pellet chute and temperature sensor TP (all models)

The pellet chute that runs from the fuel hopper to the burner pot must be cleaned thoroughly with a wire brush or the like (taking care to remove any tar, caked on dust, pellet residues, burnt-in pellet residues) to keep it smooth, thus ensuring that pellets can easily slide into the burner pot and dust does not accumulate on the chute. Take care not to damage temperature sensor TP, which is located in the chute, and check with a mirror that it is free of soot and any deposits. If necessary, and only then, dismount TP from behind and use a brush to carefully clean it of soot, pellet dust etc. Make sure TP is remounted in the correct position and at the correct depth (see relevant chapter in the assembly instructions).

9.15 Finishing servicing work, test run, and service reset (all models)

After completing all servicing work re-establish all connections and perform a test run. Only when you have completed all the above-named servicing routines should you do a service reset (counter reset) via the operating panel. Take the values of parameters "BG" (total operating hours) and "PG" (total pellet consumption) down in a logbook after every servicing, and keep the logbook in a safe place. In this way you will always have a record of past servicing work in case it should ever be necessary to call a technician.

→ How to do a service reset after completing all work:

To do a service reset you first have to enter "PW" at menu level 1!

With the appliance switched on, do the following:

- Press the **"Menu" key**; the display will then show the installed basic software (for ex. S4 002)
- Press the "+" or "-" key repeatedly until the display shows **"PW"**.
- Starting from **"PW"**, **press the "+" and the "-" key simultaneously for 4 seconds** until the displayed value jumps back to -1.5. Now the service reset has been completed.
- Press the "Menu" key once more or wait for 60 seconds until the appliance changes to the operating level.

An expert tip:

Have you really cleaned the firebox, heat exchanger, all flueways, the flue gas fan and flue connector completely and consistently? **In order for a service routine to have been effective the flue gases must be able to pass uninhibited from the burner pot all the way into the chimney.** It's not that everything must shine afterwards, but rather that just one bottleneck along this path can hinder the removal of flue gas and lead to malfunctioning. So it is pointless to polish one particular place if you are careless about or completely neglect another. The entire flue gas passage must be cleared of any obstructing material and free.

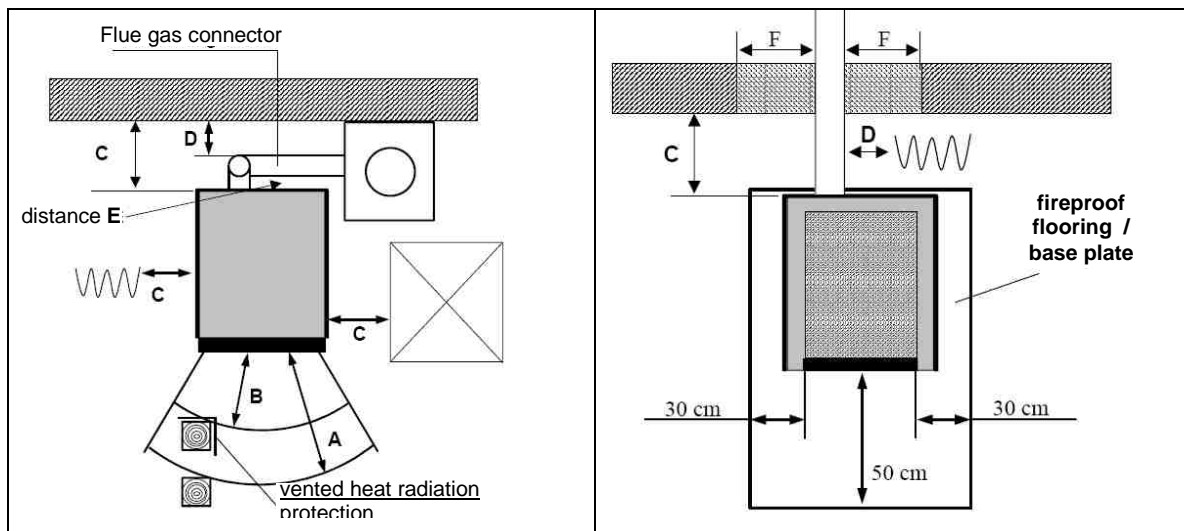
10 Fire Protection Regulations

All flammable building components, furniture or for ex. decorative fabrics close to the stove must be protected against heat. Observe in particular the local fire protection rules and regulations. The following explicit guide values have evolved from experience in device testing according to DIN standards.

Short explanation of fire protection distances (see also the following chapter)

Measure	Distance	Explanation
A	80 cm	Minimum distance to hot air outlets / within heat radiation area
B	40 cm	Minimum distance to hot air outlets with vented heat radiation protection / within heat radiation area
C	20 cm	Minimum distance outside heat radiation area
D	10 cm	Minimum distance between flue gas connector and flammable building components (also applies when flue gas connector leads through uninsulated wall, i.e. 10 cm clearance for air circulation required)
E	5 cm	Minimum distance between flue gas connector and rear side of stove
F	20 cm	Minimum insulation of flue gas connector when flue gas connector leads through insulated wall (no air circulation)

Illustration of fire protection distances



Example of flue gas connector to chimney within the room of installation

Example of flue gas connector to chimney through wall

10.1 Furniture and household equipment in the heat radiation area

Flammable building components, furniture, or for ex. decorative fabrics within the heat radiation area (from where there is a direct view of the fire) must have a distance from the frontmost edge of the firebox opening of **at least 80 cm (measure A)**. If the object in question is shielded with a vented heat radiation protection device the minimum distance is reduced to **40 cm (measure B)**.

10.2 Furniture and household equipment outside the heat radiation area

Building components, furniture or for ex. decorative fabrics must have a distance of at least **20 cm (measure C)** from the side panels of the stove.

The rear wall of the stove does not become hot. There is no need to keep a minimum distance from the rear wall for safety reasons.

Nevertheless, we strongly recommend keeping 20 cm clearance to the wall for better accessibility (for ex. for servicing).

10.3 Floor beneath and in front of the stove

Flooring made of flammable materials such as carpets, parquet or cork must be replaced or protected by nonflammable materials such as ceramic, stone, glass or a steel base plate on an area **extending over the entire base area of the stove as well as at least 50 cm forward from the firebox opening and at least 30 cm to the side from the firebox opening** (not the outer edge of the stove but the inside edge of the firebox opening).

There is no need for additional heat insulation underneath the stove; a fireproof base of appropriate weight bearing capacity is quite sufficient, since heat is not released downward.

10.4 Objects near air inlets and outlets

All air inlets and outlets must constantly be kept free and must not be blocked or covered in any way: **Danger of stove overheating!**

Flammable objects must have a **distance of at least 80 cm (measure A)** from hot air outlets or, if provided with vented heat radiation protection, a **distance of at least 40 cm (measure B)**.

10.5 Distances from the flue gas connector

wodtke appliances are equipped with safety devices that limit the flue gas temperature to **200 °C** by automatically reducing fuel feed rate when this limit is reached.

For building components requiring heat protection a **minimum distance** from the hot flue gas connector of **10 cm (measure D)** is therefore quite sufficient.

If the **flue gas connector** is not mounted horizontally as recommended but runs vertically behind the stove, this vertical section should have a distance from the fuel hopper of **at least 5 cm (measure E)**.

If the flue gas connector is installed such that it leads through a wall requiring heat protection, then it must have **at least 20 cm circumferential heat insulation (measure F)** conforming to building material category A1 in accordance with DIN 4102.

Uninsulated inside walls of apartments require a minimum **clearance of no more than 10 cm (measure D)**, since in this case the air between the flue gas connector and building component requiring heat protection can circulate.

11 Approved Fuels

According to the 1st Emission Control Ordinance (1. BImSchV) only **natural wood pellets** are allowed to be used. Firewood or other fuels or waste materials must not be used on any account.

Only pellets approved according to DIN-PLUS, DIN 51731 or Austrian standards may be used in wodtke pellet stoves. It is not permissible to use wood pellets with an ash content > 0,5%, since this would entail an unreasonable amount of cleaning and maintenance. Be sure to observe the definition of standard pellets and pellet qualities in Chapter 0 and Chapter 9 as well as the information on the amount of servicing required for different pellet qualities!

According to DIN 51731 you are only allowed to use pellets produced from natural wood and without binding agent, that is from forest wood residues or **untreated wood chips**. Other fuels would cause damage to the pellet stove and burden the environment.

Operating the stove with an unapproved fuel voids all guarantee and warranty claims and can give rise to hazardous operating states. Refrain from experiments. After all, you wouldn't fill up your car with kerosene, would you?.

The permissible pellet diameter range is 5 to 8 mm. Also, pellets should not be longer than 30 mm on average. Nor should pellets with an excessive dust content (> 5%) be used.

11.1 Storing pellets

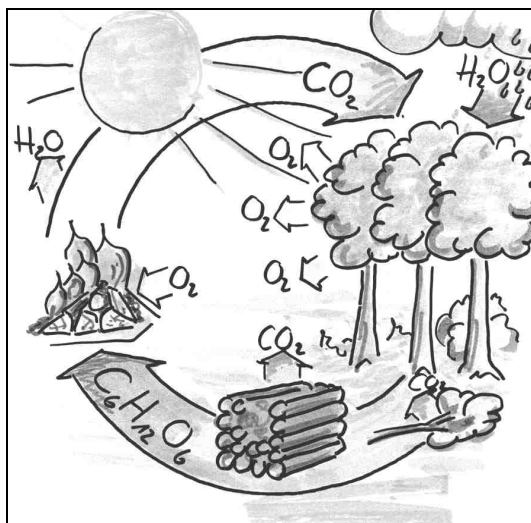
Wood pellets are delivered absolutely dry and can be used for heating in a pellet stove without any further preparation. Store pellets in a dry and clean place to maintain their quality.

11.2 Heating with wood pellets is good for the environment

Combustion of wood produces carbon dioxide. All trees and other plants depend on carbon dioxide for their growth, which they filter out of the air. Trees use carbon dioxide together with minerals dissolved in the soil and sunlight to produce new wood which can be used again as fuel as well as oxygen, which we depend on for our life. In this way a full cycle is completed.

By the way, dead wood always produces the same amount of carbon dioxide, no matter whether you leave it to rot or burn it!

The carbon dioxide cycle



12 Technical Data

	Frank Airplus PE 04.5 E – round door	Smart Airplus PO 04.6 E	Smart Waterplus PO 04.6 E WW	CW 21 Airplus PO 04.7 E	CW 21 Waterplus PO 04.7 E WW	PE Airplus PE 04.6 E	PE Waterplus PE 04.6 E WW	Topline Airplus PO 04.8 E	Topline Waterplus PO 04.8 E WW
Weight including panels	c. 108 / 112 kg (steel) c. 116 / 120 kg (ceramic) c. 139 / 143 kg (soapstone)	c. 110 kg	c. 130 kg	c. 121 kg	c. 141 kg	Body without panels c. 123 kg	Body without panels c. 137 kg	c. 108 / 180 kg (steel) c. 116 / 220 kg (ceramic) c. 139 / 250 kg (soapstone)	c. 108 / 180 kg (steel) c. 116 / 220 kg (ceramic) c. 139 / 250 kg (soapstone)
Dimensions: width x height x depth (approx. dim. in mm)	520 x 938 x 535 / 590	520 x 940 x 540		790 x 1000 x 560		660 x 1168 x 565 without telescopic hopper		660 x 1132 x 585	
Exhaust pipe (horizontal, below)	Ø 100 mm								
Nominal thermal output (setting range) ³⁾	6 kW (2 – 6 kW)	6 kW (2 – 6 kW)	10 kW (2 – 10 kW)	6 kW (2 – 6 kW)	10 kW (2 – 10 kW)	6 kW (2 – 6 kW)	10 kW (2 – 10 kW)	8 kW (2 – 8 kW)	10 kW (2 – 10 kW)
Air/water output ratio at nominal output ³⁾	100%: 0%	100%: 0%	20% : 80%	100% : 0%	20% : 80%	100% : 0%	20% : 80%	100% : 0%	40% : 60%
Volume of fuel hopper ²⁾	c. 25 kg	c. 25 kg	c. 25 kg	c. 52 kg	c. 52 kg	min. c. 38.5 kg, max. c. 55 kg telescopic hopper	min. c. 38.5 kg, max. c. 55 kg telescopic hopper	c. 50 kg	c. 50 kg
Fuel consumption (min. / max. thermal output) ²⁾	c. 0.5 kg/h / c. 1.5 kg/h	c. 0.5 kg/h / c. 1.5 kg/h	c. 0.5 kg/h / c. 2.5 kg/h	c. 0.5 kg/h / c. 1.5 kg/h	c. 0.5 kg/h / c. 2.5 kg/h	c. 0.5 kg/h / c. 1.5 kg/h	c. 0.5 kg/h / c. 2.5 kg/h	c. 0.5 kg/h / c. 2 kg/h	c. 0.5 kg/h / c. 2.5 kg/h
Operating hours from one filling (min. / max. thermal output) ²⁾	c. 50 h / c. 16 h	c. 50 h / c. 16 h	c. 50 h / c. 10 h	c. 100 h / c. 30 h	c. 100 h / c. 20 h	c. 110 h / c. 35 h at max. telescope length	c. 110 h / c. 22 h at max. telescope length	c. 100 h / c. 25 h	c. 100 h / c. 20 h
CO content of flue gas ³⁾	< 0.01 Vol %								
Flue gas mass flow (min. / max. output) ³⁾	6.0 g/s / 6.0 g/s	6.0 g/s / 6.0 g/s	6.4 g/s / 9.5 g/s	6.0 g/s / 6.0 g/s	6.4 g/s / 9.5 g/s	6.0 g/s / 6.0 g/s	6.4 g/s / 9.5 g/s	6.4 g/s / 9.5 g/s	6.4 g/s / 9.5 g/s
Flue gas temperature (min. / max. output) ³⁾	157 °C / 229 °C	157 °C / 229 °C	55 °C / 140 °C	157 °C / 229 °C	55 °C / 140 °C	157 °C / 229 °C	55 °C / 140 °C	80 °C / 180 °C	55 °C / 135 °C
Required chimney draught ³⁾	0 Pa								
Design type 1	YES – use of several stoves via one chimney possible								
Recommended chimney diameter	120 mm dia., moisture resistant, with condensate runoff; calculation according to DIN 4705 or EN required								
Tests (a selection)	DIN 18891; DIN 4702; DIN 4751; EN 303-5; §15a-BVG (Austria)								
Approvals	CE mark/ VKF/AEAI approval								
Approved fuels	Wood pellets with ash content < 0.5% and tested acc. to DIN-PLUS, DIN 51731 or Austrian standards calorific value Hu = 4.7-5.2 kWh/kg / diameter < Ø8 mm / bulk density > 650 kg/m³ if possible								
Room heating capacity (min. / max. output) assuming a heating demand of 50 W/m²	40 / 120 m²	40 / 120 m²	40 / 200 m²	40 / 120 m²	40 / 200 m²	40 / 120 m² with ext. heat exchanger (for ex. ceramic flueway) 40 / 150 m²	40 / 200 m²	40 / 160 m²	40 / 200 m²
Electric power consumption	< 50 W (ignition briefly c. 250 W)								
Supply voltage / fuse	230 V (50 Hz) / 5 A quick-acting								
Volume of water heat exchanger	n.a.	n.a.	c. 4 litres	n.a.	c. 4 litres	n.a.	c. 4 litres	n.a.	c. 4 litres
Max. operating pressure/ max. operating temperature	-	-	3 bar / 100 °C	-	3 bar / 100 °C	-	3 bar / 100 °C	-	3 bar / 100 °C
Temperature controller (H.M) temperature sensor (TW) temperature cutoff (STB)	- - 95 °C	- - 95 °C	75 °C 85 °C 95 °C	- - 95 °C	75 °C 85 °C 95 °C	- - 95 °C	75 °C 85 °C 95 °C	- - 95 °C	75 °C 85 °C 95 °C
Heat exchanger resistance at 600 l/h flow rate			c. 140 mbar		c. 140 mbar		c. 140 mbar		160 mbar

1) 7.5 kW with ceramic flueway.

2) depending on pellet geometry and bulk density.

3) according to DIN tests

13 EC Declaration of Conformity

Manufacturer: wotdke GmbH; Rittweg 55-57; D-72070 Tübingen

Product designation: pellet stove series "Topline", "Smart", "PE"; "CW 21", "Frank"

The specified products conform to the stipulations of the following European Directives:

89/336/EG	<i>Electromagnetic Compatibility (EMC Directive)</i>
73/23/EG	<i>Electrical Equipment Designed for Use Within Certain Voltage Limits ("Low Voltage Directive")</i>
89/392/EG	<i>Machines (Machine Directive)</i>
97/23/EG	<i>Pressure Equipment Directive</i>

The conformity of the specified products to the stipulations of the above Directives is demonstrated by their conformity to the standards named in the Annex.

Drawn up by: Dipl.-Ing. Dierk Astfalk
Head of Technical Development

Place, date: Tübingen, 01/05/2006

Legally binding signature:



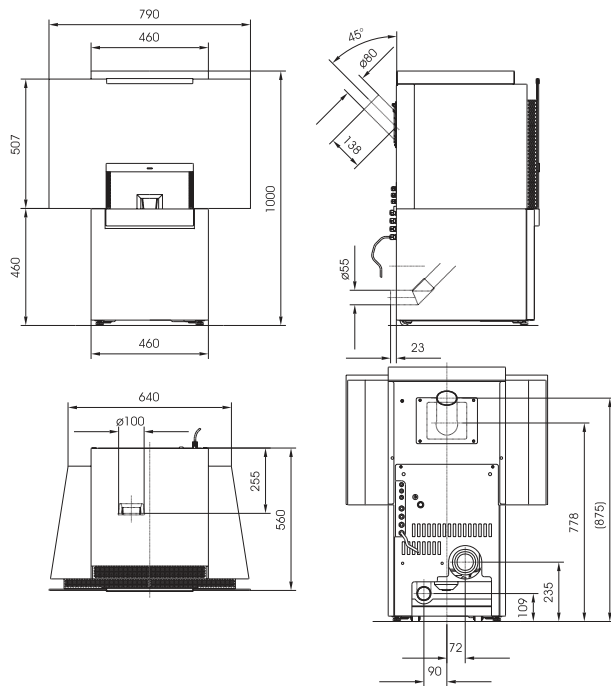
This declaration certifies product conformity to the above Directives, but it implies no guarantee of any specific properties. Observe the safety instructions contained in the included product documentation. The Annexes form part of this Declaration.

The conformity of the specified products to the above Directives is demonstrated, amongst other means, by their conformity to the following standards:

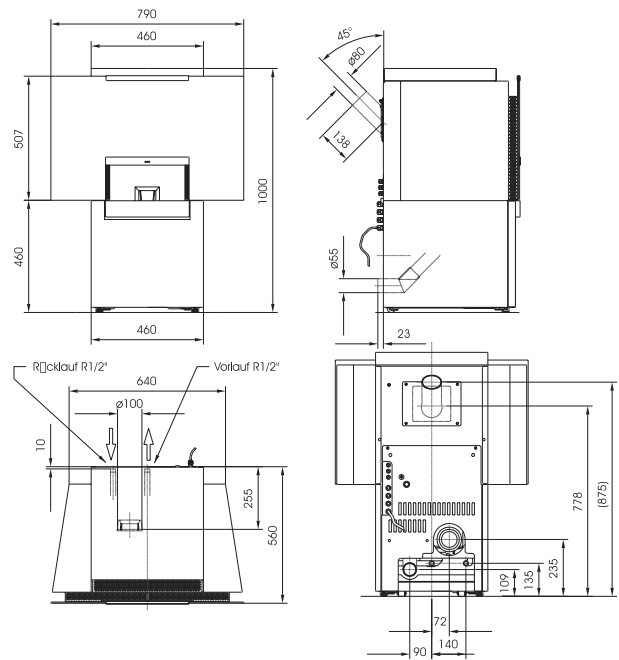
DIN 18891
DIN 18894
E EN 14785
EN 55014-1 EN 55014-2 (households)
EN 55104
EN 61000-3/-2
EN 61000-3/-3
EN 61000-4/-2
EN 61000-4-3 in the wording of DIN V ENV 50140 T3
EN 61000-4/-4
EN 61000-4/-5
EN 61000-4-6 in the wording of DIN V ENV 50141 T6
EN 61000-4/-11
Note: Criterion B or C is applicable, as the case may be.
DIN EN 60335-1
DIN EN 50165
DIN VDE 0700 Part 1
DIN VDE 0700 Part 450
DIN 57100 / VDE 0100
DIN 57106 / VDE 0106
DIN 57298 / VDE 0298
DIN / VDE 0722
DIN EN 292-1 and E DIN EN 292-2/2
DIN EN 303-5:

14 Dimensioned Drawings

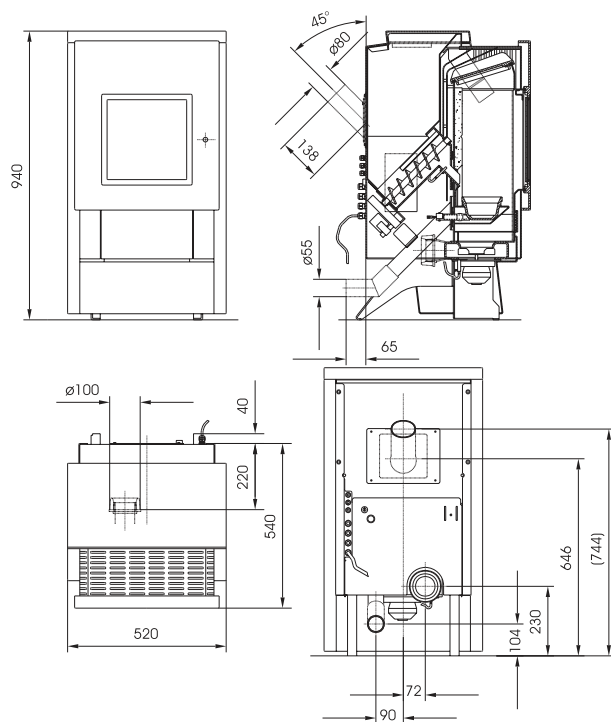
CW 21 Airplus PO 04.7 E



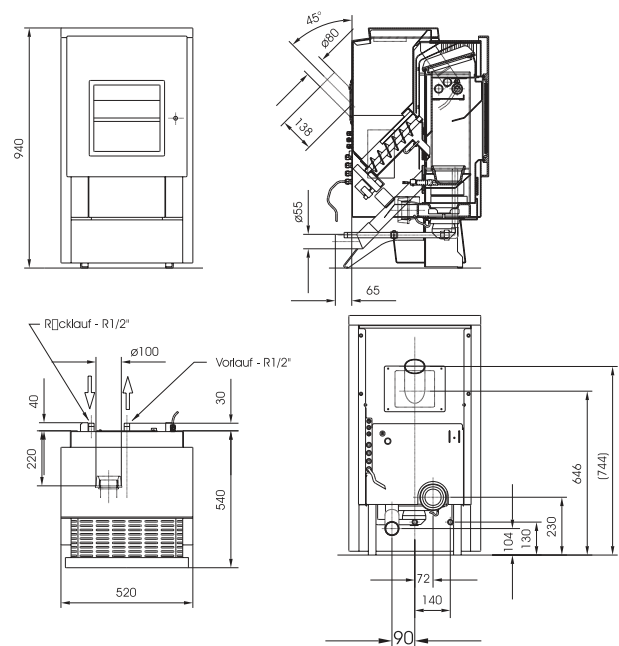
CW 21 Waterplus PO 04.7 E WW



Smart Airplus PO 04.6 E

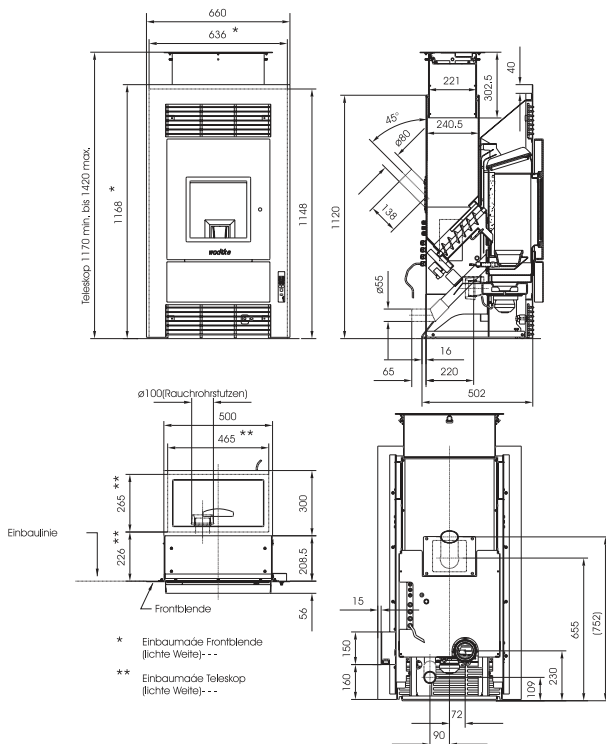


Smart Airplus PO 04.6 E

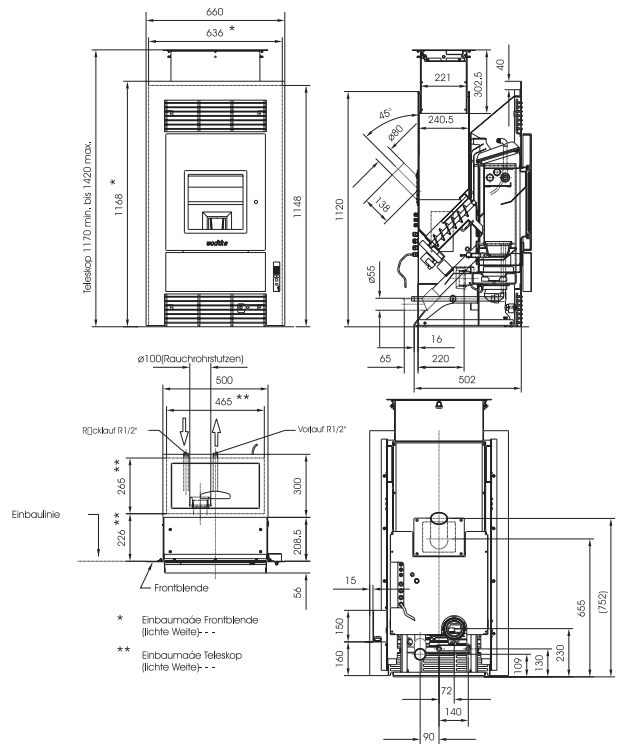


Legende: xx
 Vorlauf = heat flow
 Rücklauf = return flow

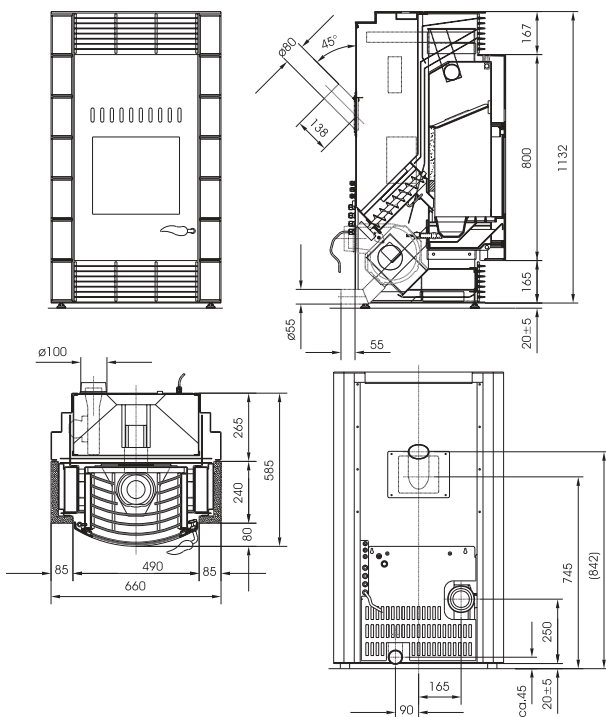
PE Airplus PE 04.6 E



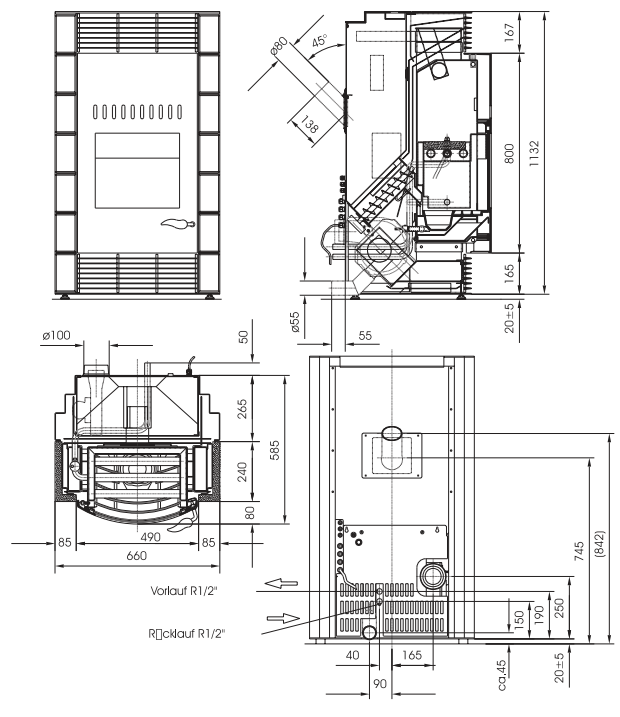
PE Waterplus PE 04.6 E WW



Topline Airplus PO 04.8 E

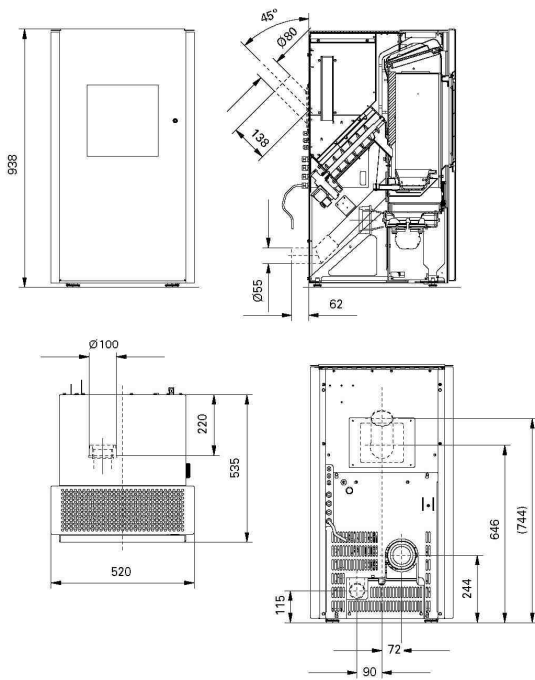


Topline Waterplus PO 04.8 E WW

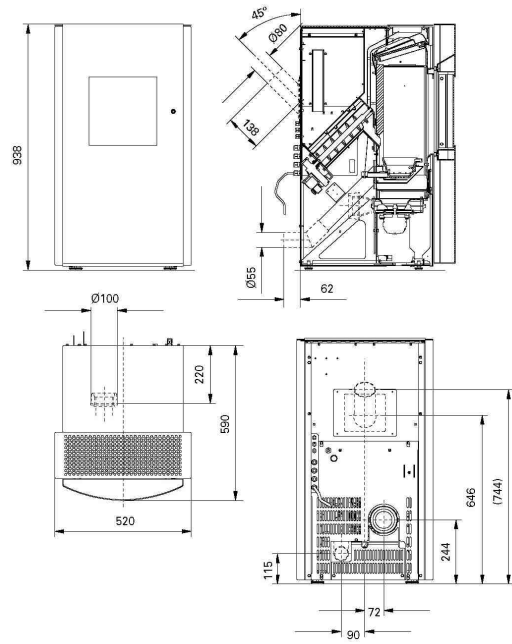


- Legende xx:
- Vorlauf heat flow
 - Rücklauf return flow
 - Rauchrohrstutzen flue outlet
 - Einbaulinie front line
 - Frontblende front panel
 - Einbaumaß Frontblende front panel assembly dimension
 - Lichte Weite clear width
 - Einbaumaße Teleskop telescope assembly dimensions

Frank Airplus PE 04.5 E – flat door



Frank Airplus PE 04.5 E – round door



15 Warranty and Guarantee

As of 1/1/2002 (delivery date) all wotdke products and components are subject to the new EU-harmonised warranty periods. Products are sold through local craft enterprises only. For virgin products the final customer's **warranty period** in relation to the seller is **24 months**. Damage attributable to normal wear and tear is not covered by the warranty, since this bears no relation to any product defect (similarly to car tyres, brake pads, spark plugs, filters etc.). Nor are the performance of lubricants or fuel (similarly to petrol, engine oil etc.) or errors attributable to improper use, installation, operation, use, care, servicing etc. covered by the warranty.

Independently of any legal regulations concerning the seller warranty wotdke gives a **six-month factory guarantee** for all wearing parts.

Wearing parts in pellet stove technology and accessories include in particular: fire-exposed inside components of the firebox such as chamotte, insulation, sealings, sheet metal or cast metal plates, burner pots, grates, viewing window glass, ignition elements.

Not included in either the warranty or guarantee are in particular all damage attributable to excessive chemical or thermal stress, overvoltage, faults attributable to operating errors or improper installation, handling, use, cleaning, servicing or operation. Perforation of water heat exchangers through rust as a result of oxygen diffusion, operation below dew point or exposure to chlorinated hydrocarbons or other metal corroding substances or gases originating from the environment or fuel likewise constitute faults attributable to improper operation and are therefore excluded from the warranty and guarantee. The same applies to the use of unapproved fuels or any kind of improper or unqualified work performed on the appliance.

All components (including glass components) of wotdke products have been tested by neutral testing institutions as well as at the production plant's outgoing inspection. These tests include involved quality and approval tests for design which relate to normal operating conditions and are based on stringent quality criteria. If errors should nevertheless occur, please immediately make your complaint to your local dealer stating the purchase date as well as the serial number of your appliance. Please appreciate that we are unable to process complaints properly unless we have the serial number of the appliance in question.

By adhering to the proper use, operation, care and maintenance of our products you will enhance their value stability and service life, help to conserve valuable resources and go easy on the environment as well as your purse.

16 Customer Service / Spare Parts

Customer service, servicing and spare parts are available from your local dealer. He will be pleased to give you his advice and support in all questions relating to your wodtke pellet stove. Please turn to your local dealer whenever you should have a problem with your wodtke appliance or be unable to rectify a fault.

When making complaints or ordering spare parts please state the date of installation as well as the serial number on the type plate of your appliance to ensure that you receive proper support and the correct replacement parts.

17 Your Local Dealer

Company:

We hope your pellet stove gives you many hours of warm, snug comfort in your home.

Your wodtke GmbH

wodtke GmbH • Rittweg 55-57 • D-72070 Tübingen-Hirschau • Tel. 0 70 71/70 03-0 • Fax 0 70 71/70 03-50
info@wodtke.com • www.wodtke.com

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Eingebettete Texte:

Anleitung Manual